II. SOIL AND VEGETATION

134 The soil in the Szechwan plain is mainly a combination of eroded dark red sandstone, yellow shale, and limestone. Underneath is a layer of clay High fertility of this type of soil is attributed to its rich mineral contents that are easily absorbable for plants and not easily washed away by erosion. Red soil of various ages cover most of the land in Yunnan Province. This type of soil shares a number of properties with common clay. In western Szechwan and western Yunnan, where the mountains are, one can find thick layers of dark grey soil, the comparatively high acidity of which is a result of abundant coniferous woods. In the former province of Sikang, the top soil is thin, often deep dark brown or black in color, and of the plateau-grassland type.

•137 Vegetation in this region can generally be divided into categories according to the altitude of the land. Along the Yangtze River in Szechwan Province, fruits like the orange and the peach, and trees like the bamboo and the palm, grow easily. On the hills up to 5,000 feet in elevation around the Szechwan plain are found oaks, evergreens, and ferns; sweet potato and maize are also planted. On higher mountains in western Szechwan and some parts of Yunnan, coniferous forests thrive magnificently, with shrubs of the rhododendron family carpeting the foothills. Dwarf juniper and flowering herbs cover the meadows at 11,550 to 15,500 feet. At still higher

137 altitudes, vegetation dwindles, and only cushion herbs survive at places sheltered from freezing winds.

III. IMPORTANT COMMUNICATION LINES AND CENTERS[12]

487 Szechwan Province is the western gate of the region, and the Yangtze River gorges guard the western entrance to Szechwan. Local transportation in Szechwan depended largely on the Yangtze River and its tributaries until the recent highway and railway development increased shipping
504 facilities in the province. Szechwan's largest river ports are Chungking and Wanhsien. Located at the conflux of the Chia-ling and Yangtze rivers, Chungking controls the inland trade of the eastern half of the province. During World War II, Chungking served as a temporary national capital, expanding to accommodate government agencies and industrial plants relocated from East China. About 200 miles downriver from Chungking is Wanhsien, one of the treaty ports open to foreign trade in 1902. Through Wanhsien is exported the bulk of Szechwan's famous tung oil output. Another river port, Lu-chou, is approximately

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[12] Ch'en Yu-ch'in, Ch'uan-yu Man-chi [Random Notes on Travel in Szechwan], Nanking, Cheng-chung shu-chü, 1934, Ch'eng Kuang-yü, Chung-kuo Tu-shih [The Cities of China], Taipei, Chung-hua wen-hua ch'u-pan shih-yeh wei-yüan-hui, 1953.

744 668 Obviously the requirements for preparation of the reports grew ridiculous. This undue emphasis on detail, when one examines Chinese Communist statistical reports, seems to be a common failing of the bureaucratic mind. At times, the Chinese Communists themselves have criticized this frequent preoccupation with niggling details. An editorial entitled "On the Counting of Mosquitoes," which first appeared in the People's Daily (Organ of the Central Committee of the Chinese Communist Party), was later quoted by the New China Daily of Chungking.[13] The editorial states that acts as absurd as these should be regarded as the inevitable growing pains of a newly founded government during a period of national construction. Red tape and wasteful practices should be exposed; the value of self-criticism is not to be ignored. The editorial states, in conclusion, that both the weaknesses and strengths of Communist China should be carefully evaluated for the insight they will bring.

• [131] 744 157 2. The southwestern provinces produce the majority of China's medicinal herbs. One of the principal tasks of the Chinese Communist health program was "to unite the strength of native and Western medicine."[14] The South-

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13. Ibid.

14. Survey of China Mainland Press, American Consulate-General, Hong Kong, No. 922, pp. 42-43.

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133, 137, 487

AF 16 Southwest China AF16

[For data on Topography, Flora and Routes, see Category 116, pp. 217-354, 388-428.]

173 Afterwards the city was captured by the Meng family (Meng shih 蒙氏), the founders of the Nan-chao Kingdom. The T'ang dynasty sent soldiers to suppress the Man. P'i-li-ko, the fourth Nan-chao King, with his soldiers joined the T'ang soldiers and pacified the savages. Nine years afterwards when the Nan-chao Kingdom had become stronger, the Ts'uan 爨 savages were weakened. The robbers (Ts'uan) however captured Yao chou 姚州, and although they again attacked An-ning, it remained in the possession of the Nan-chao kings.

The Tuan family, which in 937 succeeded to the throne of Nan-chao, made no changes and, during the reign of Tuan Ssu-lien 段思廉 (1044–1075), Kao Chih-sheng 高智升, marquis of Shan-shan, was commissioned to guard and protect their territory.

In the beginning of the Yüan dynasty (1253) it was dependent on the Yang-ch'eng-p'u 陽城堡 [10] Wan-hu fu. In the beginning of Chih-yüan 至元 (1264 or 1265) there was established the Ch'ien-hu so 千戶所 (Sub-military station of 1,000 families) of An-ning. Afterwards the name was changed to An-ning chou. At the beginning of the Ming dynasty it remained unaltered.

The native prefect, a member of the Tung family 董氏, governed hereditarily the registered families of 10 li (10 communes) and one hsien.

The *Yün-nan T'ung-chih*, ch. 141, p. 31a . . . 32a, has the following to say about the Tung family: "In the reign of Hung-wu (1368–1398) Ho-ch'ing fu 鶴慶府 was established. In the 17th year (1384) Tung Tz'u 董賜 was made native fu-prefect of Ho-ch'ing (on account of his great merit). He was originally native chou-prefect of An-ning of which city he was a native. His son, Tung Chich 董節, also on account of merit, was made hereditary native chou-prefect of An-ning in the same year his father was transferred to Ho-ch'ing. (See also *Ho-ch'ing chou chih*, ch. 20, fol. 20a.) He established schools and built the city yamen, gave lessons in agriculture and sericulture, and instructed the people in the cultivation of trees, etc."

133 *Second stage.* — From An-ning hsien to Lao-ya-kuan 老鴉關 (Crow pass) is a distance of 70 li. The trail leads up the hills to a hamlet called Ts'ao-p'u
487 草舖 (Grass shop), which is 10 li from Ch'ing-lung-shao 青龍哨 (Green dragon
137 guard-station), the lunch-stop of the day. It continues on over wild, arid
● country — an undulating plateau of gravel, red soil, yellow sand and clay. The slopes are covered with pine scrub (*Pinus yünnanensis*). Sixty li from An-ning hsien the village of Lu-piao 祿(裱)䗺 is reached. After passing through a circular terraced basin, the trail climbs to Lao-ya pass on which is a temple now occupied by the militia. The altitude of Lao-ya Kuan is 6,300 feet. Lao-ya-kuan village, which is not touched by the motor-road, extends from the top of the pass down into a little plain, and belongs to the magistracy of Lu-feng hsien 祿豐縣.

Third stage. — From Lao-ya-kuan to Lu-feng hsien 祿豐縣 is 80 li. The trail leads up through a rocky ravine to a pass which is called Yang-lao-shao 楊老哨, then past the hamlet of Pei-hou-ssu 背後寺, descending from 6,000

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[10] This is the Chin-ning hsien 晉寧縣 on the south-east bank of the lake at K'un-ming. There was an outer and an inner walled city in the chou; the inner was called Yang-ch'eng-p'u and was built by the Meng family.

feet into a deep valley in which is situated the long village of Yao-chan 腰站, 133
the regular lunch-stop for the caravans. The motor-road avoids Yao-chan
and keeps to the hill-side, descending in great zigzags to the west of the place. 487
The steep valley slopes are eroded, the strata being perfectly horizontal and 137
in various colors, such as grey and yellow clay, gravel and red soil; the land has sunk and lies tilted considerably, especially in the north-eastern part, exposing the above-mentioned varicolored strata and giving the whole landscape a peculiar appearance.

Lu-feng[11] is situated in a fertile plain at an elevation of 5,350 feet. It is a town now much dilapidated and surrounded by a low wall. The original earthen wall was built in the 12th year of Yüan Chih-cheng 至正 (1352). In the 35th year of Ming Wan-li (1607) the town was burnt by the native bandit, A-k'o 阿克 (tribal chief of Wu-ting), and the magistrate pulled down the earthen wall and built a brick one, 3 li in circumference and 16 Chinese feet high. This wall was destroyed by an earthquake in the ninth year of K'ang-hsi (1670) and rebuilt. It was repaired frequently afterwards up to the 10th year of T'ung-chih (1871).

To the west of Lu-feng, almost adjoining the wall, flows the Hsing-lo Ho 星羅河. The bridge spanning it is called Hsing-hsü ch'iao 星宿橋 (Bridge of the zodiacal constellation), another name for it being Yung-feng ch'iao 永豐橋. It was commenced in 1612 and finished in 1614 by Hsiang Chao-lin 向兆麟, magistrate of Lu-feng.

Fourth stage. — From Lu-feng to She-tzu 舍資 (also written 捨資) is a distance of 90 li. From Lu-feng the road leads through the west gate, known as the Ch'ing men 清門, over the Hsing-hsü bridge. The Hsing-hsü Chiang 星宿江 or Ho 河, another name for the Hsing-lo River, is called the Lu-shih Chiang 綠汁江 on the Yün-nan military map. It flows west of the walled town and becomes an affluent of the Red River (the Chinese Yüan Chiang 元江) which debouches into the sea in Indo-China.

The trail crosses the plain to the foot of the hills which it ascends. This particular stretch of trail is the worst on the entire journey to Li-chiang. All the villages have been burned by bandits, only the charred mud walls are [579]
standing and the fields lie waste. The mountains of this region had been for years the stronghold of the large robber bands which harassed the province.

Half-way up the mountain-side, nestled in the forest is an old temple, 10 li from Lu-feng. From a pass, 6,300 feet high, which is the top of the ridge encircling the western side of the Lu-feng plain, one has a wonderful view over a vast sea of mountains, here and there being a tiny level area with a few hamlets and fields. The trail continues below the top of the ridge along grassy and wooded slopes. Ahead are conical mountains thickly wooded with pines;

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[11] In ancient days it was the Pai-ts'un 白村 (White village) of the Lu-peng tien 祿琫甸 (tien of Lu-peng). The district was inhabited by the Wu-p'o-man 烏蹼蠻 (Black P'o savages). Their land was malarial and hot, and they thus had no definite dwelling. They were ruled in the period of Ta-li 大理 (937–1094) by I-sheng 義郡, the son of Kao Chih-sheng 高智昇. In the beginning of the Yüan dynasty the town was dependent on the Ch'ien-hu so of An-ning. In the reign of Chih-yüan 至元 (1341–1367) it was established as a hsien, subject to the chou of An-ning. The peasants of three li registered there. To-day it is a full-fledged hsien city.

487 at the foot of the nearest, the trail, now a deep trench, enters a ravine descend-
137 ing to a stone bridge and then to what was once a hamlet called Hsiang-shui-
133 kuan 响水關 (Rippling water pass). It is a wonderful spot in the midst of
[579] densely forested mountains and lovely clear streams. This was the headquarters of the robber bands. Thanks to the energetic rule of the then governor, Lung Yün 龍雲, many of the bandits were killed, the remainder dispersed, and a fort erected where soldiers are always on guard.

The trail winds in and out between high, forested spurs, finally ascending to a pass of 6,500 feet elevation. It descends into a small valley, across low ridges and thence to the small, forlorn hamlet of She-tzu at 6,100 feet. After having been plundered several times by the bandits who once occupied it for many months in 1927–28, a mud wall has been built around it, and watchtowers on the tops of the surrounding spurs. She-tzu, which formerly belonged to Kuang-t'ung hsien, is now a sub-divisional magistracy, in the district of Hei-ching 黑井 (Black salt-well — in contradistinction to the Pai-
[317] ching 白井, White salt-well). In Hei-ching are two wells called A-lou ching
阿陋井 and Yüan-yung ching 元永井. Large caravans loaded with salt make their way from here to the capital.

Fifth stage. — From She-tzu to Kuang-t'ung hsien 廣通縣 is a distance of 60 li. The trail now passes across the She-tzu plain and enters a small ravine leading to a pass, at 6,550 feet and 15 li from She-tzu, where is a shrine — a large old temple dedicated to the famous hero Kuan Yü 關羽 of the San Kuo 三國 (Three Kingdoms), later canonized as Kuan Ti 關帝 and made a god in 1594 by Ming Wan-li. The pass is called Le-ma Kuan 勒馬關 (Rein-in the horse Pass). From this pass, once a dangerous spot held by bandits, the trail descends to the edge of a small, cultivated plain on which stands the village of Hei-chü 黑苴, elevation 6,125 feet, consisting of about 25 houses; wheat, barley, and broad beans are cultivated. A number of peasants were
[483] encountered here, carrying large pine logs by means of straps over their foreheads and wooden yokes around the backs of their necks, the yoke resting on the shoulders (PLATES 7, 8).

The trail ascends steeply — the hill-side being covered with magnolias, Michelias, *Castanopsis Delavayi*, *Ketteleria Davidiana*, pines, Pyrus or wild pears, oaks, etc. — to a pass at 6,500 feet and descends to the village of Meng-ch'i-p'u 蒙七舖, elevation 6,425 feet. This is the regular lunch-stop. The path leads on across a spur into a depression which it encircles, and then climbs to a higher spur, elevation 7,110 feet. It continues on top of the spur for some time, leaving a deep valley to the right, and descends steeply over a mere rock pile of a trail to the plain of Kuang-t'ung and the dilapidated, ruined town of that name. Kuang-t'ung must once have seen better days, judging by its large now ruined temples. Its elevation is 6,300 feet.[12]

[12] The aboriginal name of Kuang-t'ung was Lu t'an 路賧. [The character *t'an* 賧 stands for the Tai word *kieng* or *shieng*, as in Kieng-mai, a town in northern Siam. The word is often written 睒 *shan*, and 瞼 *chien*, the latter probably in imitation of the Tai sound. The meaning of the Tai word is a State, a province or a town.] In the beginning of the Yüan dynasty (1253) the Lu-t'an ch'ien-hu 路賧千戶 (Lu State of 1,000 families) was established. In the 12th year of Chih-yüan 至元 (1352) [the *Kuang-t'ung hsien chih*, ch. 1, fol. 5b, states the 11th year (1351)], it became Kuang-t'ung hsien dependent on Nan-an chou 南安州,

Sixth stage. — From Kuang-t'ung to Ch'u-hsiung 楚雄 is a distance of 70 li. 487
The trail follows the foot-hills which encircle the plain, then ascends a spur 133
covered with a semi-xerophytic type of vegetation, consisting mostly of 137
Castanopsis Delavayi, pines, Ketteleria, Euonymus, Lyonia, *Rhododendron decorum*, *Rhododendron Scottianum*, Quercus, Sophora, Pyrus, *Rubus luteus*, *Rosa Banksia*, *Osteomeles Schwerinae*, etc.

The trail continues to ascend the gravelly spurs to the summit of a ridge on 175
which are situated a few houses which compose the hamlet of Hui-teng-kuan 487
回蹬關, elevation 7,050 feet. This place is of historic interest. In the 23rd
year of Yüan Chih-cheng 至正 (1363) a general, by name Ming Yü-chen 133
明玉珍, led 30,000 soldiers to this pass, coming from Ta-li to attack Shan- 137
shan, the present K'un-ming. From Ta-li fu he was pursued by Tuan Kung 段功, who ruled from 1345-1366 as hereditary Governor of Ta-li fu. Ming Yü-chen and his accomplice, Li Chih-ma 李芝麻, as well as his younger brother, Ming Erh 明二, and others, were the leaders of the Red Turban brigands; they and their soldiers were defeated here by Tuan Kung. Hence the name of the pass, Hui-teng (To return and to struggle), having reference to his army turning about and fighting Tuan Kung. It can also be translated "to turn the stirrup."[13]

From the pass the trail continues at 6,900 feet elevation (watch-towers are 487
on the pass as well as on the hills beyond), the grade being easy and the path 133
sandy; it descends 600 feet into a ravine which has been banked by a dam, 137
creating a deep, blue pond. From here the trail ascends to the village of Shih-chien-p'u 石澗舖, situated on the edge of a plain at an elevation of 6,230 feet and 30 li from Kuang-t'ung. Thence it follows along scrub-covered hills for several li at the edge of the plain, then directly across the plain, which is barred by a low red spur. On this plateau is situated the hamlet of Ling-hsü 凌墟, elevation 6,200 feet. Here a valley opens, with a stream called the Lung Ch'uan 龍川 (Dragon River) which has its source at the Ying-wu Kuan 英武關 and flows south of Chen-nan hsien past Ch'u-hsiung, thence north into the Yangtze at Lung-kai 龍街 north of Ma-kai 馬街.[14]

The trail follows up-stream on level ground partly paved, partly sandy, — the hills to the left being covered with pines and large deciduous trees (oaks, etc.) and the fields cultivated with rice — crosses the red spur just mentioned and descends into the plain of Ch'u-hsiung at an elevation of 6,300 feet.

The town of Ch'u-hsiung is walled, rather long, and possesses about 15,000 361

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south of Ch'u-hsiung. In the beginning of the Ming dynasty it was again changed (that is, 487
it no longer belonged to Nan-an chou) and henceforth came under the jurisdiction of Ch'u-hsiung and had subject to it the peasants of four li. In ancient days Kuang-t'ung had no wall; the first brick wall built was in the 45th year of Ming Wan-li (1617). It was 3 li in circumference and 18 Chinese feet high. It had four gates, each with a loft, or tower-like superstructure, and was surrounded by a moat 5 feet broad and deep.

[13] The *Ch'u-hsiung fu chih*, ch. 1, fol. 25b, states that Ko-lo-feng intended to attack the Yünnan T'o-tung ch'eng and arrived at this pass with his troops. He encountered a heavy thunderstorm when his captain advised him to return with his troops, hence the name.

[14] East of Chü-li-p'u 苴力舖 the stream is called Pai-lung Ho 白龍河. Another name for it is Hung Chiang 紅江 (Rainbow River). It receives many small affluents on its way past Chen-nan, especially from the north, such as the Shuang-lung Ho 雙龍河, Yang-ch'i Ho 陽起河, and Tzu-tien Ho 紫甸河.

361 487 inhabitants. In the Han dynasty Ch'u-hsiung belonged to the territory of I Chou. Afterwards it became the dwelling-place of miscellaneous Man (savages) carrying on agriculture and pasturage. They were called the O-lu 峨碌. In course of time, Wei-ch'u 威楚, headman of the Ts'uan, built a tamped earth wall, and Ch'u-hsiung became the *t'an* (town) of the O-lu. Because of that it was called the Wei-ch'u ch'eng 威楚城. [The town is known even nowadays as Wei-ch'u. The wall was rebuilt by Kao Ming-liang 高明量 in the time of the Tuan family, during the Sung dynasty, actually in the reign of the Nan-chao King, Tuan Cheng-shun 段正淳 (1096–1108), who laid the foundation of the new Ch'u-hsiung wall two li north-west of the present town of Ch'u-hsiung]. At the end of the reign of T'ang Cheng-kuan 貞觀 (649) all the other Man (savages) became subjects of Wei-ch'u. In the 16th year of Hung-wu (1383) the viceroy petitioned the Emperor and, presenting a map, suggested that a wall be built on the present site of Ch'u-hsiung. The petition was granted and a brick wall erected seven li in circumference and 25 Chinese feet high. It collapsed frequently and was rebuilt, the last time in 1865.

487 133 137 *Seventh stage.* — From Ch'u-hsiung to Lü-ho-kai 呂合街 is a distance of 60 li. Elevation 6,500 feet.

Passing through the west gate and the long suburb of Ch'u-hsiung, the trail skirts the western end of the plain, crosses a camel-back bridge near the hamlet of San-chia-t'ang 三家塘 (Three-family post-station), and enters a valley with several branches, taking the right-hand branch. The hills are composed of red sandstone and red clay. Passing over low hills covered with small pine trees, we descend to another small plain which the trail skirts; several hamlets are situated at the foot-hills, the elevation being 6,350 feet. The regular lunch-stop for the caravans is the hamlet of Ta-shih-p'u 大石鋪 (Great rock shop). Magnificent groves of oaks (*Quercus serrata*) grow along the road.

From this hamlet the trail meanders over rolling country and thence up a ravine past the village of Ch'ing-yüan-shao 清源哨 (Clear spring fort), 15 li from Lü-ho-kai and Ch'ien-liang-ch'iao 錢糧橋 (Tollbridge). Here in the olden days used to be a *shao* 哨 (outpost), where two soldiers stood guard. [317] The odor of sulphur permeates the air, probably from hot sulphur springs in the neighborhood. Elevation 6,450 feet. Some distance beyond, a large stone bridge crosses the Tzu-tien Ho 紫甸河, which river has its source in Ting-yüan hsien 定遠縣 and flows into the Pai-lung Ho 白龍河.

[361] The trail ascends the spur dividing the valley of the Lung Ch'uan 龍川 from the Lü-ho-kai plain, and crossing its highest point at 6,625 feet descends steeply past an old temple to the long hamlet of Lü-ho-kai, consisting of two rows of dilapidated houses. At the western end of the hamlet is a temple with a tall wooden tower overlooking the one street; the temple is called Lü-tsu Ko 呂祖閣 (Ancestral court [pavilion] of the Lü family). Lü-ho-kai belongs to the magistracy of Ch'u-hsiung. The ancient name of Lü-ho was Ho-kuan-t'an 合關灘. Later it became the Lü-ho-i 呂合驛 (Lü-ho courier station), also known as Lü-ho 呂閤. During the time of the Nan-chao Kingdom a certain Lü Shun-yang 呂純陽 lived at this place, whence its name.

Eighth stage. — From Lü-ho-kai to Sha-ch'iao 沙橋 (Sand bridge) is a distance of 65 li. Elevation 6,900 feet.

Immediately outside the village the road leads over a bridge which spans a 487
small tributary, the Ch'ing-shui Ho 清水河 (Clear water Stream), and then
across the small plain over spurs wooded with pines and oaks, only to descend 133
again to another small plain of about 20 acres. Thence it follows along a 137
beautifully wooded ridge, the main trees being pines, oaks, and Ketteleria, to a small terraced basin and ascends a gravelly spur, on the top of which, and to east of the road, is an old fort and watch-tower called Kao-feng shao 高峰哨 (High hill fort), midway between Lü-ho-kai and Chen-nan hsien 鎮南縣 (Guarding the south prefecture) 15 li either way. From the pass the trail descends into terraced, rolling country with scattered farmhouses, the path consisting of remnants of pavement-blocks, which form a ridge in the center of quagmires.

The country becomes more open and to our left is a long plain surrounded by bare hills. On this plain is situated the walled town of Chen-nan, consisting of about 600 houses. Elevation 6,600 feet.[15]

In ancient times the place was inhabited by Man-i (savages). It was the 173
land of the P'u-lo-man 濮落蠻 (P'u and Lo tribes). At the beginning of the Yüan dynasty when the Tuan family ruled Nan-chao (1253–1382), a thousand P'u-lo-man families inhabited Ch'ien-she 欠舍 (the present district of Chen-nan). In the seventh year of Hsien Tsung 憲宗 (1257) there were established the Ch'ien-she ch'ien-hu 欠舍千戶 and the Shih-ku pai-hu 石鼓百戶. In the 21st year of Chih-yüan (1284) Ch'ien-she ch'ien-hu was changed to Chen-nan chou, subject to Wei-ch'u Lu 威楚路 (Circuit of Wei-ch'u, *i.e.* Ch'u-hsiung). In the 22nd year (1285) Shih-ku pai-hu was changed to Shih-ku hsien, subject to Chen-nan. This district city was 30 li east of Chen-nan. Prior to the T'ang dynasty there was a village in that place called Shih-ku-ts'un 石鼓村, which was made a district by King P'i-lo-ko who in 730 had united the six kingdoms (Liu chao) of Nan-chao. In the 24th year of Chih-yüan (1287) the district was abolished and became a *hsiang* 鄉, or suburban district. The *Man-shu* 蠻書 says that this is the Lü-ho (kai) of Ch'u-hsiung (*see* p. 20). The same work states further that Shih-ku-i 石鼓驛 (Courier station of Shih-ku) was once called Hua-ch'uan 化川 and was three stages from Yün-nan ch'eng (the present-day Hsiang-yün hsien or Yün-nan hsien which is not to be confused with Yün-nan fu). In the reign of T'ang Shang-yüan 上元 (760–761) the district was called Su-fu chün 俗富郡.

Passing through the west gate, which faces south of the long town we come 137
to a *p'ai-fang* (stone arch), and out into the narrow, terraced valley between 133
partly wooded hills. Outside this town I found a great number of coffins above [764]
ground awaiting burial, emitting dreadful odors, and, worse still, naked corpses
of children tied to poles and wrapped in mats, their hands and feet protruding 487
and set upright against trees, with millions of flies swarming about.

The trail leads up and down over spurs and tree-covered hills and into valleys

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[15] In ancient days Chen-nan had no wall. During the reign of Ming Hung-chih 弘治 (1488–1505) the native sub-prefect Tuan Tzu-t'ung 段梓桐 built the first tamped earth wall. In the 43rd year of the period Wan-li (1615) the chou-prefect Yin Wei-hsien 尹維憲 rebuilt a brick wall. It is three li in circumference, twenty Chinese feet high and seven thick. It has four gates with towers. There is however no moat. When the Mohammedans captured the town during the reign of T'ung-chih (1862–1874) they built a moat around it twenty feet wide and deep. This has now disappeared.

487 until we reach the village of Pan-ch'iao 板橋 (Wood bridge), 30 li from Chen-
133 nan, at the foot of a wooded hill. Leaving the village to the right it crosses a
137 stone bridge called Ling-kuang ch'iao 靈廣橋, near the temple of Ling-kuang (Miao). Thence it leads up the valley between hills to the village of Sha-ch'iao, situated on a slope. The neighboring country is inhabited by a number of tribes, who come to the markets to dispose of their products.

Ninth stage. — From Sha-ch'iao to P'u-p'ung 普淜 (Pervading noise of the water) is a distance of 95 li. Elevation 7,450 feet.

Leaving Sha-ch'iao the trail winds about the hill-sides between wooded slopes in narrow cultivated valleys at an elevation of 6,900 feet. Here are situated farm-houses and small hamlets in groves of willows along a clear stream. The path leads up a narrow, densely wooded valley to the hamlet Ta-fo-ssu 大佛寺 (Great Buddha temple) after a temple situated in the center of the village, but nothing is left of the temple except a few posts. The hamlet consists of about five houses and is in a wretched state; elevation 7,000 feet.

[579] Climbing between steep, wooded hills, formerly the hunting-ground of the bandit chief Ch'ang Liang and his bands, who burned nearly all the villages in this region (fortunately he has been caught and executed, and the villages are gradually being rebuilt), the ravine becomes narrower and filled with a wonderful forest of Alnus, Pyrus, Quercus, *Rhododendron Delavayi*, *Rhod. Simsii*, *Rhod. scabrifolium*, *Rhod. microphyton*, *Rhod. coriaceum*, magnolias, Cornus, etc., until we emerge into a narrow pass at 7,900 feet and the little hamlet of Chü-li-p'u 苴力舖, 70 li west of Chen-nan. Every house in this once prosperous village was in ashes (1928–1930) — the act of bandits. Women and children sat among the debris in despair.

487 The trail continues up the narrowing ravine to the pass at 8,200 feet where
133 lies the hamlet called Ying-wu-kuan 英武關, or 鸚鵡關,[16] a distance of 50 li
485 from Sha-ch'iao. This is the regular lunch-stop for the caravans. The houses are mainly food-stalls and tea-shops which cater to the traveler. A tiny temple is back of the village in a forest of oaks.

487 From this pass the trail descends, only to ascend again to a slightly higher
133 pass at 8,300 feet, whence it leads down into a red valley, bare, arid, and ex-
137 posed to the terrific winds which sweep it from the west. At 8,000 feet we pass the wretched village of T'ien-shen-t'ang-t'ang 天神堂塘, continuing downstream for a short distance. Instead of following the valley we now turn to the right, and climb the steep spur over a terribly rocky trail between pine forests, to an elevation of 8,350 feet. Here the path emerges on to a flat plateau (the neighborhood is inhabited by Lo-lo tribesmen) and descends the broad mountain-side over which the wind sweeps furiously in winter and spring. Much of the land is bare and covered with fine, loose gravel and sand. Only barberry bushes (Berberis) manage to exist, with *Osteomeles Schwerinæ*, a gnarled shrub with white flowers. The hills are purplish-red and yellow with here and there calcareous outcroppings.

The trail, after having kept to an elevation of from 8,000 to 7,600 feet, de-

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[16] Not to be mistaken for the Ying-wu Shan 鸚鵡山 (Parrot Mountain), which is only a half li north-west of Chen-nan. The name is derived from the many parrots which are said to nest there.

scends into a valley enclosed by arid hills. The valley floor is planted with [243]
wheat at an elevation of 7,400 feet. Continuing in this valley we come to the hamlet of P'u-ch'ang-ho 普昌河 (Universal Prosperity), so named after the 137●
stream which divides it in two and is spanned by a bridge. This region and the 133
neighborhood of P'u-p'ung was the happy hunting-ground of the bandit chief Lao Ying-hsiung 老英雄, who held sway at the time of my visit in 1928. Since 487
then he has met the fate of most of the men who follow that dangerous profession.

From P'u-ch'ang-ho the trail once more ascends the pine-covered spurs to 7,725 feet elevation. The whole country is one vast sea of mountains. Leaving a deep valley to the left, we climb to 7,900 feet over a broad, gravelly, sandy spur, and then descend into a large valley to the hamlet of P'u-p'ung 普淜.

Tenth stage. — From P'u-p'ung to Yün-nan-i 雲南驛 is a distance of 65 li. Elevation 7,000 feet. (An *i* 驛 was a courier or dispatch station.)

From P'u-p'ung the trail climbs steeply to a flat spur at an elevation of 7,700 feet, where a lonely temple is situated dedicated to Kuan Ti (Kuan Ti Miao). The whole plateau is of sandstone and deeply eroded. Beyond the temple are a few farm-houses. The trail leads on over rolling country on the top of broad spurs of yellow sand and clay, covered with a scrub vegetation of pine, wild pears, Cornus, and a mass of Gnaphaliums. To the north are deep depressions, while the track skirts the mountain-sides near the top. The entire region is wild in the extreme, poor and unproductive. Hamlets are few, and when encountered they consist of only a few houses; cultivation being carried up the steep hill-side. Near a grove of large oaks is the hamlet of Shui-p'ang-p'u 水滂舖 (Roar of the waters), elevation 7,700 feet, on the inner slopes of the mountains, facing a depression south-west.

We continue now over a steep road to the top of another spur, elevation 7,800 feet, between scrub-oaks and Ketteleria trees. Beyond this pass is the hamlet of An-nan-kuan 安南關 (Pass of the peaceful south), a distance of 25 li from P'u-p'ung. In ancient days there used to be stationed here a *hsün-chien* 巡檢 (sub-district deputy-magistrate) who examined the travelers. This is the regular lunch-stop for caravans. From here the trail ascends to 8,000 feet along the edge of deep ravines where poplars and *Rhododendron Delavayi* grow; a splendid view is obtained of the large plain of Yün-nan-i to the west. Continuing for some li on the top of the spur, with waves upon waves of mountains to the south, we finally descend over a steep and much eroded trail, the mountains being sandstone, to this plain.

Yün-nan-i plain is about 25 li broad and over 60 li long, yet does not contain a single stream, or flowing water of any kind, being dependent throughout [312]
on wells and ponds. At times these become dry and water must be carried from great distances. Near the hamlet of Mu-p'ang-p'u 沐滂舖, at the foot of the spur at an elevation of 6,900 feet and the first hamlet encountered on the Yün-nan-i plain, are square ponds of bluish-grey water, the only supply of the village. Wheat is grown but no rice. A trek of about 20 li over the level plain [243]
brings one to the lonely and dreary hamlet of Yün-nan-i (Yün-nan post station).[17] The inns are poor and terrible, and the two temples of the village are

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[17] Yün-nan-i is east of Yün-nan hsien. Near to it is the ancient village of Ku-ch'eng-ts'un 古城村; it was on that account considered the Ku Yün-nan chün-ch'eng 古雲南郡城

137 occupied by schools and the militia. I found the houses here with gates walled-
133 up for fear of bandits, which fortunately are now no more. It is related that
487 the capital of Yün-nan was once at this place, but owing to the lack of water it
was transferred to the present site near the K'un-yang Lake (Tien Ch'ih 滇池).
[508] An aviation ground has been laid out east of Yün-nan-i. Neither wood nor
[374] charcoal are obtainable here, only anthracite which is burnt in open braziers,
the poisonous gases penetrating the street from the houses. The anthracite is
[316] mined near the village of Ma-kai 馬街, 15 li south of Yün-nan-i.

Eleventh stage. — From Yün-nan-i to Hung-ngai 紅崖 is a distance of 85 li. Elevation 6,120 feet.

From Yün-nan-i the trail leads along the plain, past a quaint pond near a
temple with the houses of the long village of Kao-kuan-p'o 高關坡, opposite,
then along the foot-hills for 15 li, which bring us to another small plain which
the trail crosses. From about the center of this plain, called Hsiang-yün-pa
祥雲壩 (Auspicious cloud plain; in Yün-nan a *pa-tzu* 壩子 is a plain), another
[241] trail leads south-west to Meng-hua 蒙化, two stages (120 li) distant. Wheat
and broad beans were cultivated on this plain. To the right, or north, is a lake
of considerable size called Ch'ing-hai-yün 青海雲.[18] A rocky spur closes the
plain, where is situated the small hamlet of Shai-chin-p'o 晒金坡.

The track now leads across the rocky spur to the shores of the lake. We find
ourselves on another plain which we cross, thence over some foot-hills into
a larger plain to the north. Passing through the forlorn hamlet of Kou-ts'un-p'u
[137] 溝村舖, elevation 6,900 feet, with its hedges of *Opuntia monacantha* cactus,
we come out into grassy country, the hills being absolutely bare and lonely in
the extreme, reminding one of the grasslands of north-east Tibet. To the north
there is, however, a cultivated plain, while to the south are the denuded hills.
Ahead red cliffs are visible, at the foot of which is a fairly imposing Buddhist
temple, and next to it the hamlet of Ch'ing-hua-tung 青華洞 (Azure flowery
cave), named after a large limestone cave a short way from the temple.[19] The
distance from Yün-nan-i is 40 li and it is a regular lunch-stop, although a
poorer place it is difficult to imagine; it consists of about four dilapidated
houses or, rather, ruins. The cave, about 120 feet wide, extends some distance
into the mountain, the ceiling is very high and there are several side branches.
[764] I followed the main cave for some distance but as the air became foul, and we
stumbled on old coffins and human skeletons, we returned, glad to see day-
light again. Two li north of Ch'ing-hua-tung is the magistracy of Yün-nan
hsien, also called Hsiang-yün hsien 祥雲縣.

From Ch'ing-hua-tung the trail leads directly up the mountain and thence into a ravine surrounded by bare hills, wheat being planted in its narrow floor. Within the ravine, some distance up, the trail leads through the village of I-chiang-p'u 倚江舖, elevation 7,100 feet; the whole village is occupied with

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(Ancient Yün-nan prefectural city). Nine li south of Yün-nan hsien is the village of Li-ssu-ying 力士營. Tradition relates that it was the camp (*ying*) of the army of Chu-ko Wu-hou 諸葛武侯 (Marquis Chu-ko Liang) (181–234).

[18] Also called Yeh-ching Hu 葉鏡湖. In the center of the lake is a rock resembling a mirror (*ching*), — hence the name.

[19] Ch'ing-hua Shan is the name of the mountain in which the cave is situated.

making straw sandals for coolies and travelers. The motor-road also passes 137
by this village. From there the trail continues up to a pass at 7,300 feet and 133
thence over hill-sides covered with *Heteropogon contortus*, a brownish grass, 487
and — sparingly — with pines. In the distance looms up a blue mountain range called K'un-mi Shan 昆彌山, extending in a north and south direction and separating the Hung-ngai plain from Hsia-kuan and Ta-li.

The trail ascends once more to 6,900 feet, and then leads down to the village of Chia-mai-p'u 加買舖, only to climb up again over bare hills and then descends to the plain of Hung-ngai 紅崖 (Red cliff), formerly called Pai-ngai 白崖. The name Pai-ngai was changed to Hung-ngai in the 21st year of Ch'ien-lung (1756).[20]

Hung-ngai is a long, forlorn-looking, straggling affair, with a temple at either end. The inns were and are execrable. This is due to the enormous hordes of soldiers which passed through this, as well as all the other hamlets. For years the road was next to closed on account of the bandits who harassed the region.

The earthquake which wrecked Ta-li in the spring of 1925 also played havoc 731
with Hung-ngai. In the large temple at the eastern entrance to the village 137

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[20] Pai-ngai was the ancient Ts'ai-yün ch'eng 彩雲城 and was also called Wen-an-tung 133
ch'eng 文案洞城. Afterwards it was called Pai-ngai ch'eng. In the T'ang dynasty, during 487
the reign of the Meng family 蒙氏 (649–902), it was called Pai-ngai chien 賧 and was one of the ten *chien* (States), the words *chien* and *chao* 詔 being synonymous (*see* p. 18, note 12).

The *Yün-nan T'ung-chih* (ed. 1736), ch. 26, fol. 16a, states that the ancient Pai-ngai ch'eng was 60 li east of Chao chou 趙州 and that its ancient name was Pai-ngai tien 甸. But this statement cannot be correct, for Hung-ngai, the ancient Pai-ngai, is 60 li south-south-east of Chao chou. It is correct when it says that the ancient Ts'ai-yün ch'eng was west of Pai-ngai at the foot of the K'un-mi Shan. A pass (Ting-hsi ling 定西嶺) leads over to Chao chou. The distance from Hung-ngai to the foot of K'un-mi Shan is less than ten li, so Ts'ai-yün ch'eng and Pai-ngai must have been close together and later have become one town.

The name Pai-ngai was derived from a cliff, white as snow, in the western hills. When, in the third year of Chien-hsing 建興 of the Minor Han 蜀漢 (225), Chu k'o Liang attacked Yün-nan, his soldiers camped at Pai-ngai. During the reign of Ming Chia-ching (1522–1566), a Tu-pu T'ung-p'an 督捕通判, (Police superintendent and sub-prefect), from Ta-li, dwelt there and built an earth wall which ceased to exist at the end of Wan-li (1619). The foundation of the wall was still visible in 1736.

The king of Pai Kuo 白國, Lung-yu-na 龍佑那, built Ts'ai-yün ch'eng. He had seen brilliant, variegated clouds, hence he gave the city its name.

History relates that in the 10th year of Cheng-yüan 貞元 (794), I-mou-hsün 異牟尋 fought the T'u-fan (Tibetans), at the Iron Bridge (*see* p. 57); he also attacked the Shih-man 施蠻 and Shun-man 順蠻. (The word *man* at that time was substituted for the word *chao* 詔. Shih-man was the former Shih-lang chao 施浪詔, and Shun-man was the former Lang-k'ung chao 浪穹詔 of the five *chao* which later were absorbed into the Nan-chao Kingdom.) The Shih-man were also a tribe and originally belonged to the Wu-man (Black savages). They dwelt north-west of the Iron Bridge. The Shun-man also belonged to the Wu-man and dwelt in the same region as the Shih-man. I-mou-hsün captured Hsün-lo 尋羅, king of the Shih-man, and placed him and his kindred in Meng-she ch'eng 蒙舍城. He also captured the king of the Shun-man, whose name was P'ang-mi-ch'ien 傍彌潛, and placed him with his kindred in Yün-nan Pai-ngai 雲南白崖. The *Erh-yüan hsien chih* (*Lang-k'ung hsien chih lüeh*), ch. 3, fol. 2a, says that during the period of T'ang Cheng-yüan 貞元 (785–804) Nan chao attacked Chien-lang 劍浪 (Chien-ch'uan), took Lang-k'ung, Shih-lang and Teng-t'an (Teng-ch'uan), united the three *lang* and created Lang-k'ung chou.

Seven li south-east of Pai-ngai, there was established the secondary (military) transport station of 1,000 families 白崖千戶所, in the 12th year of Sung Shun-yu 宋淳祐 (1252).

487 the great mud idols were all knocked off their feet, and were leaning against
731 the wall, their legs from above the ankles resting on the floor. The village is
133 at the western end of the plain, which is 30 li in length. A stream called
● 137 Ch'ih-shui Ho 赤水河, (Red water Stream) crosses the center of the Hung-
[508] ngai plain from north to south; 30 li down the valley to the south is the town
of Mi-tu 彌渡 where there is an aviation ground. Although the plain is very
fertile, next to nothing could be bought in the way of vegetables.

487 *Twelfth stage.* — From Hung-ngai to Fei-lai Ssu 飛來寺 via Chao chou 趙州
133 (Chao chou is now called Feng-i hsien 鳳儀縣). The distance to Fei-lai Ssu
137 is 65 li. Elevation 6,000 feet.

From the Hung-ngai plain the trail ascends a deep ravine which seemed to have cleft the mighty range hemming in the plain on the west. The climb is a steep one over a bad road, between bare hills and slopes, to an elevation of 7,200 feet, or 1,100 feet in 15 li. To describe the rocky stairway which leads to the pass at the top of the ravine is an impossibility.

The pass, a little below which is situated a temple called Yün-t'ao Ssu 雲濤寺, is over the summit called Ting-hsi ling 定西嶺, which name is engraved in large characters on a memorial stone in front of the steep temple-steps. The stone bears the date 14th year of Ming Hung-wu (1381). The entrance to the temple is a tea-shop. It is an excellent lunch-stop when coming from the west, but not when coming from Hung-ngai. From the pass a trail leads to the left to Meng hua 蒙化, south of Hsia-kuan 下關 and Ta-li. This used to be a famous brigand haunt, but to-day they have disappeared, and now the motor-road is opened and they are a memory only. The name Ting-hsi ling was given to the pass and peak by Mu Ying 沐英,[21] marquis of Hsi-p'ing 西平侯, in the beginning of the Ming dynasty. Its ancient name was K'un-mi ling 昆彌嶺. From this pass the trail descends, as gradually and gently as it ascended steeply on the other side, into another deep ravine with the left or western slopes densely wooded, but with only pines covering the eastern slopes.[22]

[731] We pass various hamlets, such as Hsiao-shao 小哨 and Ta-shao 大哨, partly destroyed by the earthquake of 1925. Elevation 7,100 feet. From here on the valley broadens, and the hills are bare. The trail descends to the edge of the valley along rice-fields, and emerges on the plain on which Chao chou (Feng-i hsien) lies at an elevation of 6,900 feet. Chao chou is a walled city

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[21] Mu Ying was a native of An-hui. He was appointed Governor of Yün-nan in 1384. His sons also held this office in succession. He died in 1392. In 1388 he gained a great victory over the Burmese, so that in 1380 Burma acknowledged the suzerainty of China (GILES). When he attacked Yün-nan it was as Fu-tsung-ping 副總兵 (Assistant Brigadier-General), with Lan Yü 藍玉, marquis of Yung-ch'ang 永昌, who held the same rank. Both served under General Fu Yu-te 傅友德 who was in command of the southern expedition. This was in the 14th year of Ming Hung wu (1381).

[22] Another peaceful lunch-stop away from mules and shouting muleteers is the Buddhist temple of T'ai-kuo Ssu 泰國寺 (Exalted nation Temple), built at the foot of a mountain wall called Ling-an Shan 靈安山 (Mountain of spiritual peace). It was built in the third year of Hung-wu (1370) according to the priest who had resided for 33 years in the temple. The *Chao chou chih* 趙州志, ch. 3, fol. 5a, states that it was built during the reign of Ming Ts'ung-cheng 明崇禎 (1628–1643).

of about 600 houses, but quite forlorn and empty.[23] The plain is wide but is 487
hemmed in on the north by a broad, conical hill, partly wooded. Five li be- 133
yond Feng-i (Chao chou) we come to the hamlet of Shih-pi-t'ou 石碑頭 and 137
the peaceful temple at the foot of the cliff, called Fei-lai Ssu,[24] which is the
regular caravan halting-place, as there are no inns with stables in Chao chou.

Thirteenth stage. — From Fei-lai Ssu to Hsia-kuan 下關 (Lower pass) and Ta-li 大理 is a distance of 25 and 50 li respectively (55 li from Chao chou).

Near the end of the plain, at the foot of a wooded conical hill, the trail makes a complete right angle to the west, and one is fronted by the magnificent Tien-ts'ang Shan 點蒼山 (Starred azure Mountain), commonly called Ts'ang Shan,[25] snow-streaked half-way down its slopes; its height is 14,000 feet. We

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[23] In ancient days Chao chou had no wall. The first earth wall was built in the second year of Ming Hung-chih (1480). It was 3 li in circumference, 13 feet high, and 5 feet thick. Several times at various periods the wall collapsed and was last rebuilt in 1805. Prior to the Han dynasty, Chao chou was in the State of K'un-mi 昆彌. During the Han dynasty (B.C. 206–24 A.D.), it belonged to Yün-nan hsien. K'un-mi was the name of a family who ruled over that State — hence K'un-mi Kuo — but nothing is known regarding their succession. Afterwards the Lo-lo man 羅落蠻 dwelt there. In the T'ang dynasty it was the land of K'un chou 昆州. Subsequently it was called Chao chou chien 趙州瞼. Later it was called Chao chün 趙郡 and Chao chou. In the time of the Tuan family it was called T'ien-shui chün 天水郡. In the beginning of the Yüan dynasty it was the Chao chien ch'ien-hu 趙瞼千戶. During Yüan Chih-yüan (1264–1294) it was called Chao chou subject to the circuit of Ta-li. In the Ming dynasty the name remained unchanged. When Kublai Khan attacked Ta-li, Chao chou was first captured; and when the Ming troops attacked the region they first took Chao chou and then the two strategic forts, the Hsia and Shang Kuan. The district derived its name from a certain Chao K'ang 趙康 who was sent to reside there by the Meng family of the Nan-chao Kingdom.

[24] The temple received its name from a legend which relates that an image of a Buddha came flying through the air. It is situated at the foot of Yü-lung Shan 浴龍山 (Mountain of the bathing dragon), also known as Su-lung Shan 宿龍山 (Resting dragon Mountain), and is five li north of Chao chou. Another temple called T'u-chu Miao 土主廟 (Temple of the local lord) is in the same village. It was rebuilt during the period Cheng-t'ung 正統 (1436–1449).

[25] The Ts'ang Shan is also called Ling-chiu Shan 靈鷲山, named so after a peak in India called Gṛdhrakūta on which vultures had their nests: literally, "Vulture Peak." The Indian mountain, which is now called Giddore, is near Rājagṛha, famous for its vultures and caverns inhabited by ascetics, where Piśuna, or Māra, in the shape of a vulture, hindered the meditation of Ananda (EITEL). It has 19 peaks, and 18 streams descend from it. In the first year of the period Hsing-yüan 興元 (784), of T'ang Te Tsung 德宗, I-mou-hsün of the Meng family, who was ruler of Ta-li, conferred upon it the title of Chung-yo 中嶽 (Central sacred Mountain). During the reign of Hung-wu, Lan Yü 藍玉, second commander of the left wing of the army and marquis of Yung-ch'ang, attacked Ta-li. He sent his soldiers west of the Ts'ang Shan and ordered them to climb it from the west and implant his flag on the highest peak. When the people of Ta-li saw the flag they fled. The *Ta-li fu chih*, ch. 5, fol. 1b, states that it is 3 li west of the city and that it extends for over 100 li from north to south, like a wall. The *Han Shu* calls it the Hsieh-lung Yün-nan Shan 邪龍雲南山 and compares it to the T'ai-i Shan 太乙山 of Fu-feng 扶風, Shensi. Clouds often encircle the mountain like a jade girdle, hence people speak of it as the Jade girdle (mountain). Each of its nineteen peaks has a special name, for all are different. Enumerated from south to north beginning with the one above Hsia-kuan and adjoining the T'ien-sheng ch'iao, they are: K'o-yang 斜陽, Ma-erh 馬耳 Horse ear, Fo-t'ou 佛頭 or Buddha head, Sheng-ying 聖應, Ma-lung 馬龍 or Horse dragon, Yü-chü 玉局, the Lung-ch'üan 龍泉 or Dragon spring, and the Central Peak or Chung-ho feng 中和峯. Then follow the Kuan-yin 觀音, or Goddess of

487 pass through miserable hamlets nearly destroyed by the earthquake, and over
133 a sandy trail which skirts the hill-sides, leaving to our right the southern end
137 of the Erh Hai 洱海 (Erh Lake), that is, the Ta-li Lake (PLATE 4). On Davies' *Map of Yün-nan* the distance to Hsia-kuan does not appear to be more than 15 li, in comparison to the stretch from Hsia-kuan to Ta-li; the scale is quite out of proportion. The actual distance from Chao chou to Hsia-kuan is 30 li, and from there to Ta-li 25 li.

Hsia-kuan is situated on a hill-side and is visible from afar; elevation 6,900 feet. It is the business town of western central Yün-nan, while Ta-li is the residential town and the seat of the officials. The Hsia Kuan has another name — the Lung-wei Kuan 龍尾關 (Dragon-tail Pass). This, as well as the Shang Kuan 上關 (Upper pass, also called Lung-shou Kuan 龍首關, Dragon-head Pass) were constructed by P'i-lo-ko 皮羅閣 in the 29th year of K'ai-yüan 開元 (741). He was the first ruler or King of Nan-chao and the fourth of the Ta Meng or the Great Meng dynasty. The first kingdom of the Ta Meng was called the Meng-she chao 蒙舍詔.

Passing through the walled town with its narrow streets, we cross the Hei-lung ch'iao 黑龍橋 (Black dragon bridge), over the Hsia-kuan Ho (Hsia-kuan River),[26] the outlet of the Erh Lake,[27] and ascend the steep grade over the slippery pavement of the suburbs of Hsia-kuan.

Mercy Peak, the Ying-lo 應樂, the Hsüeh-jen 雪人 or Snow-man Peak, the Lan-feng 蘭峯 or Orchid Peak, the San-yang 三陽, the Ho-yün 鶴雲. the Pai-yün 白雲, or White cloud, the Lien-hua 蓮花 or Lotus Peak, the Wu-t'ai 五臺 or Five Terraces, the Ts'ang-lang 滄浪 and last the Yün-lung 雲弄, directly above the Shang-kuan.

[26] The Hsia-kuan Ho, where it enters the defile in the Tien-ts'ang Range, is called the Ch'ing-shui Ho 清水河 (Clear water Stream); beyond it is called the Ho-chiang Ho 合江河, after a village by that name in the gorge. It flows as the Ho-chiang Ho into the Yang-pi River 漾濞江.

[27] The Ta-li Lake, which is 90 li long and from 9 to 21 li wide, is a beautiful sheet of water. To the east it is bordered by reddish, bare, rather low hills, the region being called Tung-hai 東海 (East lake). The lake is also called the Hsi-erh Ho 西洱河 (West Erh Stream), and is east of T'ai-ho hsien 太和縣, the present Ta-li hsien or Ta-li district. It is also known as the Yeh-yü Shui 楪榆水 (Waters of Yeh-yü) — Yeh-yü being the ancient name of Ta-li. [The Yeh-yü of the Han epoch is 10 li south-east of the present-day Ta-li and is identical with the village of Yang-ho-p'u 楊和鋪, where its foundations, or remnants, are still visible. The region now belongs to the district of T'ai ho hsien. During the Han dynasty it was subject to Yün-nan hsien 雲南縣, now called Hsiang-yün hsien 祥雲縣, pronounced in Yün-nan, Ch'ien-yün hsien.] The origin of the name Yeh-yü is traced to a large forest of elms, called *yü-shu* 榆樹 in Chinese. [*Ulmus pumila var. pilosa* Rehd. is quite common on the eastern slopes of the Tien-ts'ang Shan.] The elm forest existed in ancient days at the outlet of the Ta-li Lake at Hsia-kuan, by the T'ien-sheng ch'iao 天生橋 (Natural bridge), a natural stone bridge which spans the outlet of the lake. It was so dense that it was always dark and no one could pass there. To the south of the bridge is a stele which records that it was there that Chu-ko Liang captured Meng-huo 孟獲. The stele is dated Kuang-hsü *ping-wu* 丙午 (1906).

Still other names for the Ta-li Lake are Hsi-erh Hai 西洱海 and Erh Shui 洱水.

The source of the lake is in the Pa-ku Shan 罷谷山 in the north of Lang-k'ung hsien 浪穹縣. Flowing south it passes east of Lang-k'ung hsien and Teng-ch'uan chou 鄧川州 and thence enters the borders of T'ai-ho hsien, where it is called Hsi-erh Ho. From the Tien-ts'ang Shan, which lies to the west, 18 affluents descend into the stream, which thus enlarged forms the Erh Hai. Its outlet is at Hsia-kuan as has already been described.

The shape of the lake is that of a human ear, *erh* 耳, hence the name Erh Hai. Its cir-

[764] ● 137 133 487 Beyond, the country road is paved and slippery and passes through wheat-fields with thousands of graves to the west up the hill-sides, that is the foot-hills or slopes of the Ts'ang Shan. Traffic is heavy on this road, especially in the month of April when the annual fair is in progress. The hills are bare and brown, the lower slopes, as already remarked, being covered with graves. Here is also a thirteen-storey pagoda, the apex of which is in ruins.[28]

Sails are visible on the lake and boats crossing the placid waters to the district of Tung-hai 東海, East lake [the district is actually east of the lake]. [291] Hundreds of people were on the road, the men all wearing low, broad-brimmed hats covered with a sky-blue oil-cloth, and long streamers of the same color knotted in front over the chest or hanging loose down to the knees. Straw-hat sellers were to be seen; the hats are made from rushes, most of them plain, others ornamented with gaudily colored straw, pink, blue, and yellow.

Fifteen li bring us to the temple of Kuan-yin Ssu 觀音寺 (Goddess of Mercy Temple)[29] (PLATE 5).[1] In front of it kitchens and restaurants were doing a roaring business, for it was at the time of the fair when, in 1922, I made my first visit to Ta-li, coming overland from Siam via Chieng-mai, Keng-tung, Chiu-lung-chiang 九龍江, Ssu-mao 思茅, Ching-tung 景東 and Meng-hua 蒙化. The village near the temple is called Yang-ho-p'u 陽和舖.

113 Tradition relates that when the soldiers of Han arrived at the frontier, the Kuan-yin Ta-ssu 觀音大士[30] changed herself into an old woman and carried a large rock by means of a rope made of rice-straw. When she saw the soldiers she spat at them. The soldiers remarked that if the old women of the country could perform such work what must be the strength of the young; and this was sufficient to put fear into the camp. The Kuan-yin's rock is now in the court of the temple in the center of a pool containing gold-fish, and with a shrine over it. The old temple was destroyed during the Mohammedan Rebellion (1855–1873) but was rebuilt afterwards. Volumes could be written

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cumference is over 300 li. There are three islands in the lake, the southern being called Yü-chi tao 玉几島 (Jade table island), the central one Ch'ih-wen tao 赤文島, and the northern one Chin-so tao 金梭島 (Golden shuttle [weaver] island).

[28] This pagoda is called I-T'a Ssu 一塔寺 (Single pagoda). It is also known as Hung-sheng Ssu 宏聖寺 and is situated south-west of the city of Ta-li. It is over 100 feet in height and is said to have been built by A-yü Wang (King Aśoka of India). This has also given the pagoda the name of A-yü Wang t'a 阿育王塔 (Pagoda of King Aśoka). It is hardly possible, however, that Aśoka should have built it. The *I-t'ung chih* of Chia-ch'ing 嘉慶一統志 (Chinese Geography) records that it was built during the time of the Sui Emperor Wen Ti 文帝 (581–604). The pagoda stands below the seventh peak of the Ts'ang-Shan range.

[29] The real name of the temple, which is written on a board over the entrance, is Ta-shih An 大石庵 (Great rock Shrine). It is also commonly called Kuan-yin-t'ang 觀音塘 and Shih-li-t'ang 十里塘 (Ten-li post-station), as the distance from Ta-li to this temple is commonly reckoned as 10 li.

It is not known when the temple was first built, but the dates of its restoration or rebuilding are extant. It was first rebuilt in 1807; in the reign of Hsien-feng (1851–1861) soldiers destroyed it by setting fire to it. In the second year of Kuang-hsü (1876), the Ta-li Governor, Yang Yü-k'o 楊玉科, rebuilt it. Yang was a native of the district of Li-chiang, having been born in the salt-well village of La-chi-ming 喇雞鳴. His ancestors hailed from Ching chou 靖州 in Hu-nan 湖南.

[30] The word Ta-ssu stands here for the Sanskrit term Mahāsattva (perfected Bodhisattva, greater [*mahā*] than any being [*sattva*] except Buddhas).

[1] [see p.28 E-- Analyst]

344 been built barracks for the regular troops stationed at Ta-li. The San-t'a Ssu 三塔寺 (PLATE 6)[1] are also called Ts'ung-sheng Ssu 崇聖寺 and near them is the grave of the P'ing-chang 平章 (Minister of State) Tuan Kung 段功, a member of the ruling house of Tuan under the Yüan dynasty. He died in 1366.

As has already been remarked, Ta-li (the name is said to be of Tai or Siamese origin, *i.e.*, T'a-lé = lake)[34] is of great historic interest, but does not come within the scope of this work. An aviation ground has been laid out between Ta-li and the lake. [508]

487 *Fourteenth stage.* — From Ta-li to Teng-ch'uan 鄧川[35] is a distance of 90 li. Elevation 7,100 feet.
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The trail leads across sandy and rocky stream-beds, which descend from the Ts'ang Shan Range, and over ditches and brooks. In the distance is a long, narrow spur extending from the Ts'ang Shan towards the lake: this is the Shang Kuan 上關 (Upper Pass).

We pass a small hamlet which has escaped both earthquake and bandits, and now follow close to the foot-hills as far as the village of Chou-ch'eng 周城, 50 li from Ta-li. Many large *Ficus stipulata* trees, their trunks surrounded by stone enclosures for people to rest their burdens on, are met with along the road.

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From the last village, which is a lunch-stop, it is 20 li to the village of Shang-kuan (also called Dragon-head). The elevation is 7,100 feet. The poor, miserable hamlet is in absolute ruins, having been burnt and looted by the bandit chief, Chang Chieh-pa 張結疤 (Chang the Stammerer). A sordid scene unfolds as one enters the gates of this former stronghold. No inn was available, not a single house intact, and at the time of writing — 1934 — nothing had been reconstructed. The village of Sha-p'ing 沙坪, only two li beyond, shared the same fate as Shang-kuan, and the large schoolhouse, which once served me as shelter, existed no more.

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[34] PROFESSOR GEORGE COEDES, Director of the Ecole Française d'Extrême-Orient, Hanoi, in answer to an inquiry regarding the possible Siamese origin of the name Ta-li, writes: "The Siamese word for 'lake' is *da-lé*, pronounced *t'a-lé*, but it is most probably a loan-word from Khmer *danlé* pronounced *tonlé* (Tonlé Sap, Cambodia's Great lake). The use of Cambodian loan-words is usually restricted to South Siam, and I do not think that *da lé* or *t'a lé* exists in any Northern T'ai dialect. The etymology of Ta-li from *da lé* appears to me as extremely doubtful."

As to the origin of the name Ta-li, the *Ta-li hsien-chih kao*, ch. 3, fol. 5a–5b, states that in the T'ang dynasty the Meng family absorbed the other five kingdoms, that is, they united the Liu chao 六詔 (Six kingdoms). In the second year of the period Hsing-yüan 興元, in the reign of T'ang Te Tsung (785) (this should read first year of the period Cheng-yüan 貞元, as there was no second year of Hsing-yüan) the grand-child of Ko-lo-feng, I-mou-hsün, called himself the Jih-tung Wang 日東王 (King of the Orient) and took as his dynastic title Ta Li 大禮. It was not until the second year of the period T'ien-fu 天福 of Emperor Kao Tsu 高祖 of the Later Chin dynasty 後晉 (937) that Tuan Ssu-p'ing 段思平 established the dynastic title Ta Li 大理. The *Li-chiang fu chih lüeh*, ch. 上, fol. 14b, and the *Nan-chao Yeh-shih*, however, state that it was I-mou-hsün who first established the name Ta-li, or Ta Li 大理, as his dynastic title in the first year of Hsing-yüan 興元 (784). Ta Li 大禮 means "great decorum" or "great propriety," while Ta Li 大理 means "great principle." As can be seen, there is therefore some discrepancy in establishing the date, etc., of the name Ta Li 大理.

[35] The ancient name of Teng-ch'uan was written T'eng-ch'uan 邆川.

[1] [see p.28 F.-- Analyst]

Beyond Sha-p’ing, at the end of the lake,[36] the trail climbs the rocky spur 487
among old graves, skirts the red hill-sides above the marshy plain to the east, 133
thence through a lovely wood and out onto the eroded, red, rocky hills. High
ranges enclose us on both sides. We descend to the walled town of Teng- 137
ch’uan,[37] crossing by a bridge over a small stream called the Ch’i Shui 溪水 which forms the moat of the city, and flows past the south gate. A long street descends into this forlorn place, which dips northward. There are no inns for caravans, but a large school-house, or former Confucian temple (Wen Miao 文廟), gave us shelter. The temple, situated in spacious grounds, is in fairly good repair. An agricultural station and the yamen of the magistrate adjoin it. The plain is very fertile and the wheat-fields were the best so far encountered. [243] Buckwheat is also grown.

Fifteenth stage. — From Teng-ch’uan to Niu-kai 牛街 is a distance of 90 li. Elevation 7,500 feet.

From the town we descend to the plain, where we met hundreds of Min-chia peasants carrying local produce to market, such as cereals, rice, pears, mats, reeds, wine in earthen jars, hides, vegetables, etc., and in such quantities that I was astonished and wondered who would buy all these things. It was an endless procession, for it was market-day in Teng-ch’uan. The trail leads between fields and through a large marsh with tall rushes growing in it which are used in making mats and the Ta-li hats.

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[36] At the north end, 15 li south of Teng-ch’uan near Sha-p’ing, there is a marshy pond separate from the Ta-li Lake, though its waters drain into it. It is called Shang Erh Ch’ih 上洱池 (Upper Erh Ch’ih).

[37] In the Han dynasty, ´ eng-ch’uan was in the territory of I-chou Chün, in the prefecture of Yeh-yü 葉榆. In the beginning of the T’ang dynasty it was the T’eng-pei chou 邆備州, dependent on Yao chou 姚州, the seat of the Tu-tu 都督 (military governor). Afterwards it became the T’eng-t’an chao 邆賧詔 by conquest. It was united with Nan-chao and the latter established the *t’an* 賧 of Teng-ch’uan 邆川. Afterwards it was changed to the city of Te-yüan or Te-yüan ch’eng 德源城.

In the beginning of the Yüan dynasty there was established the Sub-military station of 1,000 families of Te-yüan.

In the 11th year of Chih-yüan 至元 (1274) the name was changed to Teng-ch’uan chou 邆川州, dependent on Ta-li. This name was retained in the Ming dynasty. To-day it is called Teng-ch’uan hsien.

In the third year of Lung-ch’ing 隆慶 (1569) the T’u-chih-chou 土知州 (native prefect) A 阿 was done away with and a transferable official appointed, under whom were registered or enrolled the families of 12 li (communes), and who controlled one hsien. (From *Tu-shih Fang-yü-chi-yao* 讀史方輿紀要, ch. 117, p. 8b.)

In ancient days Teng-ch’uan had no wall. The first was built, of tamped earth, by magistrate Chou Wen-hua 周文化 in the third year of Lung-ch’ing (1569).

Later it sank in the sand and water and the city was without a wall; it was not rebuilt until the 14th year of Ts’ung-cheng (1641). It had three gates — in the east, south, and north respectively. It was rebuilt several times, but in 1762 it was replaced by a brick wall which was then three and seven-tenths li in circumference and had four gates.

The town is most peculiarly situated on a steep slope, with the Ch’i Shui 溪水 flowing past the highest part of the town just outside the south gate, which has a small stone bridge in front of it. This stream which encircles the city debouches into the Lo-shih Chiang 羅時江 to the north. One steps from the bridge down into the gate and on down the long, steep street which leads through the town. In summer Teng-ch’uan is said to be frequently inundated with flood water. A common saying is that the magistrate who built the wall was

487 Twenty li of level going, after passing the village called Yu-so 右所, bring
133 us to another small hamlet at the foot of the embankment of the canal[38]
●137 which carries the waters of the Lang-k'ung Ho 浪穹河 [here the stream is called the Mi-chü Ho 瀰苴河] into the Ta-li Lake. This is the hamlet of Chung-so 中所 where we cross a bridge[39] over the canal to the eastern embankment. Elevation 7,000 feet. The slopes of the canal banks are wooded mainly with Albizzia trees, Rhus, Zizyphus, etc., giving welcome shade to the traveler.
[317] Here we met with large salt caravans with their dirty, grey, cylindrical blocks of salt,[40] also many tribespeople carrying loads of firewood by means of yokes around their necks. The yokes in turn are fastened to straw bands borne over the forehead (PLATES 7 and 8).

As the trail nears the Lang-k'ung gorge, the stream is bounded only on the east by the embankment, the mountains to the west forming its other bank. Here the path enters a deep ravine, bare of trees, except for some *Opuntia* cacti which grow among the black boulders and line the trail or road — for this part of the highway has been improved and graded, and can almost be called a road. The old trail, which led purposelessly up and down over the hill-side, had been abandoned since my first visit in the spring of 1922. Halfway up the gorge we come to a bridge, elevation 7,225 feet, over the roaring torrent known in ancient days as Hsi-erh Ho.[41] On the other side of the gorge a trail leads to the hsien city of Lang-k'ung,[42] formerly known as Erh-yüan 洱源; from there it is 100 li north to Chien-ch'uan, and 45 li south to Teng-ch'uan.

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executed with his entire family and relations by order of the Emperor, so that there remained no descendants.

[38] This canal is called by the Na-khi, Bu-ndo-lo-gko (Hind part of a pig). *Lo-gko* means "inside."

[39] This bridge is called Te-yüan ch'iao 德源橋, and was built by Wang Kan 王榦, a native of Teng-ch'uan, during the reign of Ming Ying Tsung, period T'ien-shun 天順 (1457–1464).

[40] The salt comes from the salt-well of Ch'iao-hou ching 喬后井, situated on the east bank of the Pai-shih Chiang 白石江, which is really the Yang-pi 漾濞, the Chinese calling the upper part of that river the Pai-shih Chiang. The Chinese military map of Yün-nan, printed in the seventh year of the Republic (1918), gives three names for the river: the Kung Chiang 工江, Pai-shih Chiang 白石江, and Yang-pi 漾濞. The strangest thing about this map, however, is that the northern part of the Yang-pi, or Kung Chiang, flows into the Mekong near a place called Hsiao-tien 小甸; the central portion, or Pai-shih Chiang, flows west of the Ts'ang Shan; and the lower part, called the Yang-pi, according to the same map, flows again into the Mekong, this time north of the town marked Yün chou 雲州! This error has, however, been corrected in a later edition published in 1928. The Yang-pi has its source at the head of the valley, 50 li south of Shih-ku 石鼓, flows by Chien-ch'uan 劍川, where it receives the outlet of the lake, and then straight south, and west of the Ts'ang Shan range, into the Mekong. No large river enters the Mekong below Wei-hsi. It is impossible to say what the Kung Chiang is, and where it enters the Mekong.

[41] This river has its source 20 li north of Lang-k'ung in the mountain called Pa-ku Shan 罷谷山; it is the present-day Lang-k'ung River. Chinese geographies say that it flows east of Ta-li and then joins the Yang-pi Ho. They consider Ta-li Lake, into which the river flows at Teng-ch'uan, as a continuation of the river, and the Hsia-kuan Ho, the exit of the Lake, as the same river.

[42] During the Han dynasty Lang-k'ung belonged to the land of Yeh-yü (the present Ta-li region).

Our trail keeps to the east slope of the gorge and ascends to the end of the 489
ravine, or rather its beginning, on a narrowing plain. Here stood a village, but
nothing is left now except charred ruins, it having been burnt down by the 133
bandits. We emerge into a red, hilly country, and here the Lang-k'ung River 137
receives an affluent.

The trail follows the left bank of the stream along the foot-hills and by the village called Hsün-chien-ssu 巡檢司, thence across the gravelly stream-bed, and continues on the right bank between roses and Pyracantha bushes. We cross a gravelly plain to the base of a red hill, which we ascend to the top, at an elevation of 7,550 feet. Here, to the right of the trail, is a small but beautiful lake called Kan-hai-tzu 乾海子. We now descend between pine-covered hills to a plain on which is situated the hamlet of Ying-shan-p'u 鷹山鋪, elevation 7,350 feet. To our right is a steep, rugged mountain mass cut up by deep ravines or chutes. It is a sacred mountain called Fo-kuang-chai Shan 佛光寨山 or simply Fo-kuang Shan;[43] half-way up the mountain is a cave said to hold 10,000 people. A temple, called Ling-kuang Ssu 靈光寺, is visible on the slopes; the temple was built in the first year of Wan-li (1573) by the village police chief Lü Meng-hsiung 呂夢熊.

From here we follow over the well-cultivated plain, wheat being the most [243]
abundant crop, past the villages of Wen-pi-ts'un 文筆村 and Ch'ang-ying
長營, until we finally reach the hamlet of San-ying 三營 (Three camps). It
is a long, narrow village with a peculiar gate in the center. Elevation 7,500
feet. On this stretch we met long processions of Min-chia women carrying
furniture, latticed Chinese doors and windows, baskets or huge stacks of straw [438]
hats, and — these were in the majority — huge juniper coffin-boards seven
feet long, four inches thick, and three feet wide. These came from Pai-mang
Shan 白芒山, many stages to the north, where there are large forests of immense junipers — *Juniperus wallichiana*. They are floated down the Yangtze
to Shih-ku and are thence carried to Teng-ch'uan and by boat on the lake to
Ta-li.

From San-ying it is five li to Niu-kai 牛街 (Cattle-market).

A short distance beyond San-ying is a limestone hill called Huo-yao Shan [135]
火藥山[44] (Fire medicine or powder mountain): it is about 300 feet high, with
a pagoda (*wen-pi* 文筆) on the top. The rocks are full of holes and the entire hill is honeycombed; it is the only limestone hill in the immediate neighborhood. At its foot are boiling hot springs, the water being crystal clear as it boils and bubbles up (temperature 170° F.). Steam rises everywhere between the rice-fields and the people wash their clothing in the boiling pools. In February, 1935, this peculiar mountain suddenly erupted. A severe earthquake preceded the eruption, the noise emanating from the mountain sound-

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[43] It is also called Fo-kuang-chai 砦 and I-nü Kuan 一女關 (Pass of a woman). The latter name has reference to a narrow slanting defile back of the mountain. It was in this cave that Chu-ko Liang, marquis of Wu 武, captured Meng-huo 孟獲. Later in the Ming dynasty in 1383, General Fu Yu-te 傅友德 suppressed a rebellion of native chiefs who fled into this cave. At that time 13,000 people in all were decapitated and 400,000 families of the native tribes made their submission. It was then that Li-chiang made its submission to the Ming, and the Mo-so were pacified.

[44] Also called Huo-yen Shan 火焰山 (Flaming Mountain).

487 ing like thunder. Immediately after the earthquake flames burst forth from
133 the mountain, so that the heavens were reddened. This lasted nearly an hour,
137 after which no fire was visible. Later the people went to see the hill and found that a large section of it had fallen in, covering up several of the hot springs which flowed from its base. No one was injured.

579 Niu-kai is a village in ruins, thanks to the activities of the bandit chief Chang Chieh-pa and his hordes; when I passed through in 1928 he had only a few days before made his submission to the Yün-nan government. More exactly: holding a Belgian missionary as hostage, whom he threatened to kill should the governor of Yün-nan send further troops against him, he brought the governor to accept his own terms. Thus he was established as military ruler of the entire district. He sat with 1,000 of his bandits in the poor village which he had all but burnt to the ground, and the impoverished peasants had to feed the brutes who had ruined their homes. The village consists of about 600 families, and lies on the slopes of the foot-hills, at an elevation of 7,500 feet. It belongs to the magistracy of Ho-ch'ing 鶴慶.

487 *Sixteenth stage.* — From Niu-kai to Tien-wei 甸尾 is a distance of 70 li.
133 Elevation 7,800 feet.

137 From the village of Niu-kai the trail keeps to the foot-hills which encircle the plain to the right. Somewhat beyond the village a path branches off at the end of the plain, into a deep valley which leads to Ho-ch'ing. This is the shortest way to Li-chiang.

Our trail leads across the Niu-kai plain to a limestone mountain with smooth cliffs on which inscriptions are still discernible dating back to K'ang-hsi (1662–1722). The mountain is called Kuan-yin Shan 觀音山[45] (Goddess of Mercy Mountain), and so is the village a short distance beyond; a Buddhist temple[46] nestles at the foot of the cliff. In the south it joins on to the Tien-ts'ang Shan. Half-way up the mountain is a cave called T'ai-chi tung 太極洞 (Cave of the ultimate immaterial principle, *i.e.*, of the Chinese cosmology). In the center of the cave is a pond called Chin-lung t'an 金龍潭 (Golden dragon pool) which is said to be very deep (the depth being unknown).

A short distance beyond, at a tiny temple, the trail ascends the red hills covered with oaks, pines, *Pinus Armandi* and *P. yünnanensis*, Alnus, *Castanopsis Delavayi*, rhododendrons, roses, Berberis, etc., up over limestone mountains, through oak forest, to a pass with a few houses called Ch'ou-shui-ching 臭水井 (Stinking water-well). At this place many hold-ups and murders were committed by the bandit hordes of Chang Chieh-pa. He strung up his victims by the thumbs to branches of high trees, and tied rocks to their feet;

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[45] The name originated from a likeness of Kuan-yin cut into the rock of the mountain by Ko-lo-feng 閣邏鳳 (King of Nan-chao, 748–778) of the Meng family. Other names for the mountain are Fang-chang Shan 方丈山 (Abbot Mountain), Lien-hua Shan 蓮花山 (Lotus Mountain) and Hsiang-yün Shan 祥雲山 (Auspicious cloud Mountain). It is one of the seventeen famous mountains of the Nan-chao Kingdom. (From the *Ho-ch'ing chou chih*, ch. 4, fols. 5b–6a).

[46] The temple is called Miao-hsing An 妙行菴 (Hall of the practice of the Excellent or the Unfathomable). A board bearing the above characters is over the temple gate. It was presented by the Na-khi chief, Mu Hsing 木興, in the 33rd year of K'ang-hsi (1694). Mu Hsing was born in 1667 and died in 1720.

lighting a fire beneath he left them to their fate. It was always a dreaded pass 487
for caravans. At this summit are large groves of oaks (*Quercus Delavayi*); the 133
elevation is 8,930 feet. The motor road passes below and to the west of it. 137

The trail here descends a little, only to climb again to 9,250 feet, and then continues downward between round, low hills of yellowish-red clay, over a shallow basin-like depression which in the rainy season becomes a pond. This is called the Yeh-ya t'ang 野鴨塘 (Wild-duck pond). The trail goes down between pines to the village of the same name, which we found entirely in ruins, having been looted and fired by the brigands. The path leads steeply into a circular, unproductive, gravelly basin of which only the terraced slopes are cultivated. A big stream issues from the right, which in the summer is an unfordable torrent. It is here called the Sha-pa Ho 沙壩河, as it flows through a sandy plain lined with old poplars and willows. It is a treacherous river and has carried away several bridges; lately a new one of stone has been constructed. At the other end of the little sandy plain is the hamlet of Yeh-chi-p'ing 野雞坪 (Pheasant flat). Elevation 8,500 feet.

From this basin we climb over pine-covered hills on the top of which the trail continues. A little westward and ahead is the mountain mass of Lao-chün Shan 老君山 or Mountain of Lao-chün or Lao Tzu, the founder of Taoism. Beyond this mountain is visible La-pa Shan 拉巴山 (La-ba Ngyu in Na-khi), between 14,000 and 15,000 feet in height. To the extreme left, or south-west, is another high mountain which divides the Mekong from the Yang-pi. It is called Hsüeh-p'an Shan 雪盤山 (Snow-basin Mountain), but
more commonly Yen-lu Shan 鹽路山 (Salt-road Mountain), for salt is brought [317]
over it from the salt-well of La-chi-ming 喇雞鳴, west of Lan-p'ing 蘭坪 (Handel-Mazzetti on his map calls it the Ye-lu-schan).

The trail descends over a gravelly ridge winding along valley slopes with a roaring stream to our left, down to the plain of Tien-wei; we cross the same stream which we passed over at Yeh-chi-p'ing and arrive at the village of Tien-wei, after going through large groves of old oaks. Half of the village, situated on the slopes of a hill across the plain, was destroyed. The distance from Niu-kai to Yeh-chi-p'ing being 53 li, the latter is the regular lunch-stop. The elevation of Tien-wei is 7,800 feet.

Seventeenth stage. — From Tien-wei to Chiu-ho 九河 is a distance of 60 li. Elevation 8,150 feet.

The trail leads from Tien-wei past a temple downhill to the Chien-ch'uan plain, leaving the Chien-ch'uan Lake (Chien Hu 劍湖), which is said to be 60 li square, to the east. We pass a new bridge, called Hai-hung ch'iao 海虹橋 (Lake rainbow bridge), over the Tien-wei Ho (the river makes here a semicircle like a rainbow), which is none other than the Yang-pi River, by the village of Shang-teng 上登; at its entrance opposite the bridge, there is a large, now ruined, temple which is three li from Tien-wei. On the Chinese military map the town of Tien-wei is south-east of the lake, though in reality the lake is east of the town. The plain is intensively cultivated, while on the hill-sides grow *Catalpa Duclouxii*.

From the trail one has the first good view of the Li-chiang snow-range (Yü-lung Shan 玉龍山 — Jade dragon Mountain), although it is already visible

487 from Tien-wei. In the distance can be seen the northern peak of the range,
133 separated by the Yangtze from the main range. This peak is called in Na-khi,
137 Ha-ba ndshěr nv-lv (the Ha-pa Shan 哈巴山 of the Chinese), simply called Hsüeh-shan 雪山 (Snow mountain) on the Chinese military map.

We follow the edge of the plain, skirting the foot-hills between fields of wheat, beans and peas (only the northern part of the plain is cultivated with rice), pass the hamlets of Han-teng 漢登 and Hsi-chuang 西莊, a distance of ten and a half li from Tien-wei; then Chu-chüan-ch'ang 猪圈場, and from there to Shui-chai 水寨. From this last village it is only a short distance to the walled town of Chien-ch'uan 劍川. Here we met hundreds of Min-chia peasants carrying heavy loads, some enormous earthen jars and pots, others [482] mats, firewood, and pigs in baskets. Very large pigs were slung on poles between two men, the pig securely tied in a mat.

About 20 li from Tien-wei begin the walls of Chien-ch'uan (Rapier stream). [322] This place is renowned for its carpenters, who are clever wood-carvers, and makers of furniture.[47] Chien-ch'uan is at an elevation of 7,750 feet. To the west, on the grassy slopes of the foot-hills, are thousands of graves. Here is the favorite camping place of the Tibetan caravans which come from the north to Ta-li and beyond. Above the graves on the hill-side is a large Buddhist temple called Ti-tsang Ssu 地藏寺 (Temple of the Bodhisattva Kshitigarbha, Lord of the Earth).

[243] The trail passes between irrigated wheat and rice-fields to the hamlets of Pan-teng-ho 板凳河 and Yung-p'an-ts'un 永盤村. We follow the left border of the plain, which narrows towards the north, passing the villages T'ai-

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[47] Chien-ch'uan is the ancient territory of the Man-i (savages). The Hsi-i (Western barbarians) called the town Lo-lu, for in their language *lo-lu* meant lake, and had reference to the Chien Hu or Chien-ch'uan Lake near which the town is situated. In the T'ang dynasty (618–906) it was the I-tu Lo-lu ch'eng 義督羅魯城. I-tu was one of the 10 original *chien* 瞼 (districts) of the Nan-chao Kingdom. (*Chien* is the Chinese transcription of the Tai word *keng* or *xieng*). The Lo-lu ch'eng is the present-day foundation of Wa-yao-ts'un 瓦窰村 (Tile kiln village). It is 15 li south of Chien-ch'uan. The walls of the Lo-lu ch'eng were built in the T'ang dynasty. In the beginning of the reign of T'ang Cheng-yüan 貞元 (about 786), Nan-chao fought Chien-ch'uan and captured the entire territory. Their chief changed his residence to Chien-t'an 劍賧 and changed its name to Chien-ch'iang 劍羌. The Nan-chao Kingdom established the government of Chien-ch'uan. In the Sung dynasty it was changed to I-tu t'an 義督賧 and was also called Po chou 波州.

In the beginning of the Yüan dynasty there was established the *so* 所 (Sub-military station) of the 1,000 families of I-tu (I-tu ch'ien-hu so 義督千戶所).

In the 11th year of Chih-yüan 至元 (1274), the name was changed to Chien-ch'uan hsien (Magistracy of Chien-ch'uan) under the rule of the Ho-ch'ing Lu 鶴慶路 (Ho-ch'ing Circuit). The *Chien-ch'uan chou chih*, ch. 3, fol. 15b, states that the military and civil yamen of the governor of the Circuit of Ho-ch'ing was established in the 8th year of Chih-yüan (1271) and the I-tu 義督 was changed to Chien-ch'uan hsien dependent on the Circuit of Ho-ch'ing. In the 17th year of Ming Hung-wu (1384) it was raised to a chou and the families of 18 li 里 (communes) were registered there. In ancient days Chien-ch'uan had no wall, but during the reign of Hung-chih 弘治 (1488–1505), magistrate Li Wen 李文 built a tamped earth wall. In the 15th year of Ts'ung-cheng (1642) the wall was changed to a brick one, 16 Chinese feet high, and 12 thick. The moat was eight feet wide and five deep. During an earthquake in 1688 the wall fell, the towers toppled over the gates, and it was not rebuilt until 1690; it was once more rebuilt in 1712 and again destroyed by an earthquake in 1751. In 1860 the Mohammedans flooded the town with water from Lake Chien and many lengths of the south-eastern part of the wall collapsed. It was finally rebuilt.

p'ing-ts'un 太平村, Liu-chia-teng 劉家登 and Tien-hsin-ch'iao 甸心橋. The 487
village of Mei-tzu-shao 梅子哨 is not on the Chien-ch'uan plain but beyond 133
a narrow ravine, the slopes of which are covered with pines. Opposite the village, 137
in a lovely pine forest, are numerous graves. This or the village of Kan-mo-ho 乾磨河 is the regular lunch-stop for the day. Five li from this village will bring us to the end of the stage, the village of Chiu-ho 九河 (Nine streams),[48] but there are still the villages of Chiang-tung 江東 and Wen-mu-ho 文木河 to be passed. Ere reaching Chiu-ho there is a beautiful isolated hill with a lovely forest of oaks (*Quercus semicarpifolia*), and thence we travel along the foot of a rocky hill entering the long valley which leads to Shih-ku 石鼓 on the Yangtze. Chiu-ho is situated on a low spur at an elevation of 8,150 feet. It is a miserable hamlet with a single dilapidated temple. Caravans bound for Li-chiang usually prefer to go beyond it to the hamlet of Tu-wo 杜鵝 also called Tu-wu 杜吳 on Chinese maps (Na-khi, Dtu-wùa).

We have now arrived at the border of the Li-chiang district, to which the village of Chiu-ho belongs. South of it is Chien-ch'uan territory.

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[48] Chiu-ho is called in Na-khi, Gkyi-wùa; and Kuan-shang 關上, at the end of the valley which extends north of Chiu-ho, is called Gkyi-wùa Ts'o-k'ö.

CHAPTER II

THE LI-CHIANG DISTRICT

487 *Eighteenth stage.* — From Chiu-ho to Li-chiang 麗江 is a distance of 90 li.
133 Elevation, 8,200 feet.

137 From Chiu-ho we follow the plain, leaving to the left the large village of Nan-su-mei 南蘇梅 and five li further on coming to the village of Pei-su-mei 北蘇梅,[1] the names meaning Northern and Southern Su-mei respectively. Opposite the village and the temple is a small open-air theater where we used to stop with our caravan on former journeys. In this region the walnut trees were still leafless. This at the end of April. The hills forming the western valley wall are a brilliant red and covered with pines (*Pinus yünnanensis*). Many villages are scattered along the foot-hills, some extending up their slopes (*see* description of Chiu-ho li, p. 178). Small trails lead from this valley to Lao-chün Shan 老君山, which has always been a rendezvous for brigands. From the village of Pei-su-mei, it is five li to the Na-khi hamlet of Tu-wo (P'u-wu in Min-chia) where the Na-khi caravans prefer to put up for the night. Both villages are situated at the eastern side of the valley; here, also, the hills are covered with pines and numerous walnuts; the latter, mostly cultivated, can be found along the road, besides pears, peaches and plums.

The trail meanders over the gravelly valley floor past Wu-li-p'ai 五里牌, then P'o-chio 坡脚 (Foot of the hill) or Kuan-shang 關上 (Na-khi, Ts'o-k'ö), 30 li from Chiu-ho. This is the last village in this valley, at the head of which is a beautiful, deep blue lake, the head-waters of the Yang-pi River. The lake is called Bbu-t'u-ndĕr (Shrimp pond), in Na-khi. From here it is a drop of 2,000 feet to the Yangtze and a distance of about 50 li to Shih-ku. The valley is inhabited mostly by Min-chia in the lower, and Na-khi in the upper part.

From the village of Kuan-shang the trail is paved, but is in a most terrible condition, and the grade next to impossible. It ascends from an elevation of 8,300 feet at Kuan-shang, over the partly forested mountain called T'ieh-chia Shan 鐵架山 which hems in the valley to the east, to the top of a pass at 9,800 feet, and shortly to another pass 10,100 feet above the sea. Here we have emerged on a rather large, dry plateau, the trail leading between low, round, 243 wooded hills. The Na-khi come from their villages and cultivate the gentle slopes of the hills, mostly with buckwheat and oats. On both sides of the trail are large sink-holes from which the plateau derives its name, Lo-shui-tung 落水洞 (Sinking water caves).[2] These holes, which are apparently of great depth, remind one of volcanic blow-holes or small craters; but here all is lime-

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[1] The village is called Ts'o-k'ö-muan in Na-khi (Lower Ts'o-k'ö). Transcribed in Chinese characters it is written Ts'o-k'uei mou [illegible]. It is also called Nan-kuan-chan 南關站.

[2] "The topography of this down country is very old and in striking contrast to the valley which leads to the Yangtze and Shih-ku, and in which Kuan-shang is situated. The features of the down, with its gentle, rounded hills and shallow valleys, were developed before the formation of the Kuan-shang valley. The rocks exposed in the western part of the downs belong to the Kaoliang Series. The latter consist of phyllites and chloritic schists, quartzites, crystalline limestone, and limestone breccia. They belong to the Archeozoic or earliest era of geological history." (GREGORY)

stone, and the entire plateau is apparently hollow, as is the region of the lake 487
of La-shih-pa 刺是壩. The walls of the sink-holes are covered with oaks and 133
pines, the floors giving way in the center to funnel-like shafts.

The trail leads east over the undulating plain of yellow clay and extensive 137
limestone outcroppings, which remind one of the lava-flows of Hawaii, but are grey in color. These outcroppings are taken possession of by deep pink *Rhododendron racemosum* bushes which, with a prostrate form of *Quercus semicarpifolia*, form regular carpets.

Straight ahead is the famous pyramidal mountain Wen-pi Shan 文筆山 (Pencil Hill), called Sä-bpi zhĕr nv-lv, or Sä-bpi a-nan Ngyu, in Na-khi, whose slopes had suffered badly during the earthquake in 1925, when the whole western face of the mountain slid down, forming a huge talus slope. The mountain is renowned in Tibet. It represents a mountain deity called Zhi-da-mung-po (gzhi-bdag-smug-po གཞི་བདག་སྨུག་པོ). (*See: San-pi-wai-lung* p. 184).

Further the trail turns north-east over the same plateau (called in Na-khi, La-bpiu-k'o), at an elevation of 10,000 feet, and then descends to a little shrine called the Shan-shen Miao 山神廟 (Shrine of the mountain spirit). It continues on down to a lower plateau — again with sink-holes — the level places being under cultivation. From here the Li-chiang snow range is now visible to the north.

The crops on this plateau are dependent wholly on rain, for it is entirely 312
waterless. The lowest part stands at 9,400 feet, and the dusty trail seems endless, but descends at last through pine forest to the plain of La-shi, in Chinese La-shih-pa 喇是壩 (also written 刺是壩). The caravan-stop is at the hamlet of Sä-bpi wùa boa (also called Sä-mbi wùa-boa in the Dto-mba or Na-khi priest books). Elevation 8,700 feet.

Beyond the village a wooden bridge leads over the La-lo-k'a stream, whence the trail runs between the La-shi Ḳhü (Lake of La-shi), and the mountains and then north-east towards the pass over the spur which joins the southern end of the Li-chiang snow range with Ma-an Shan 馬鞍山 and Wen-pi Shan 文筆山. The pass is called in Na-khi, La-shi gkaw-gku, is 8,750 feet above sea level, and 20 li from La-shih-pa. From its foot it is eight li across the plain to the town of Li-chiang.

As the region to the south of Li-chiang is inhabited mainly by the Min-chia tribe it may not be out of place here to say a few words about these neighbors of the Mo-so, or Na-khi.

THE MIN-CHIA TRIBE (PLATES 7, 8)

The Min-chia 民家, called Lä-bbu by the Na-khi and considered by them 101
as their second elder brother — the first being the Tibetan, whom they call Gv-dzu — are known to the Chinese, especially in their literature, as Pai-jen 白人 (White people). In their own language they call themselves P'ĕr-tsu, colloquially they speak of themselves as P'ĕr-nv-tsu. They are scattered over much of Yün-nan and formed once the principal population of the ancient Nan-chao Kingdom. Unlike the Na-khi they have no written language. They are much intermingled with the tribes which live in the neighboring region of

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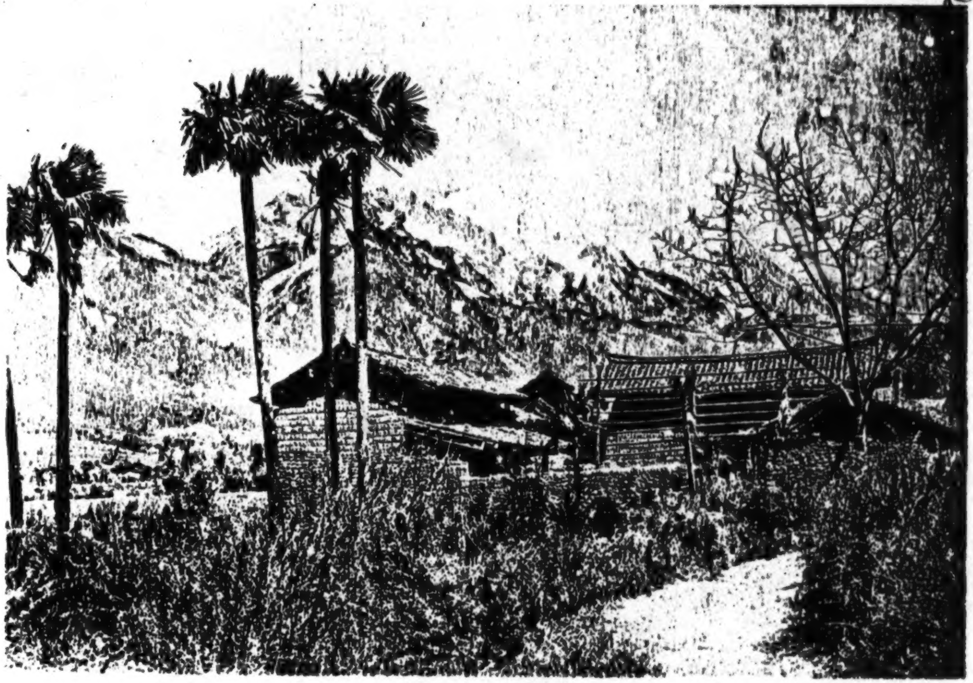
[p.1408]



(Courtesy Nat. Geogr. Soc.)

PLATE 66. — MOUNT SHAN-TZU-TOU

玉龍山扇子陡

The highest peak of Yü-lung Shan as seen from the village of Llü-mä-ndaw-ts'aŋ (in foreground) in the li of Pai-sha. To the left fan palms (*Trachycarpus Fortunei*), to the right a leafless walnut tree. The rack in front of the house is used for drying grain, turnips, etc.

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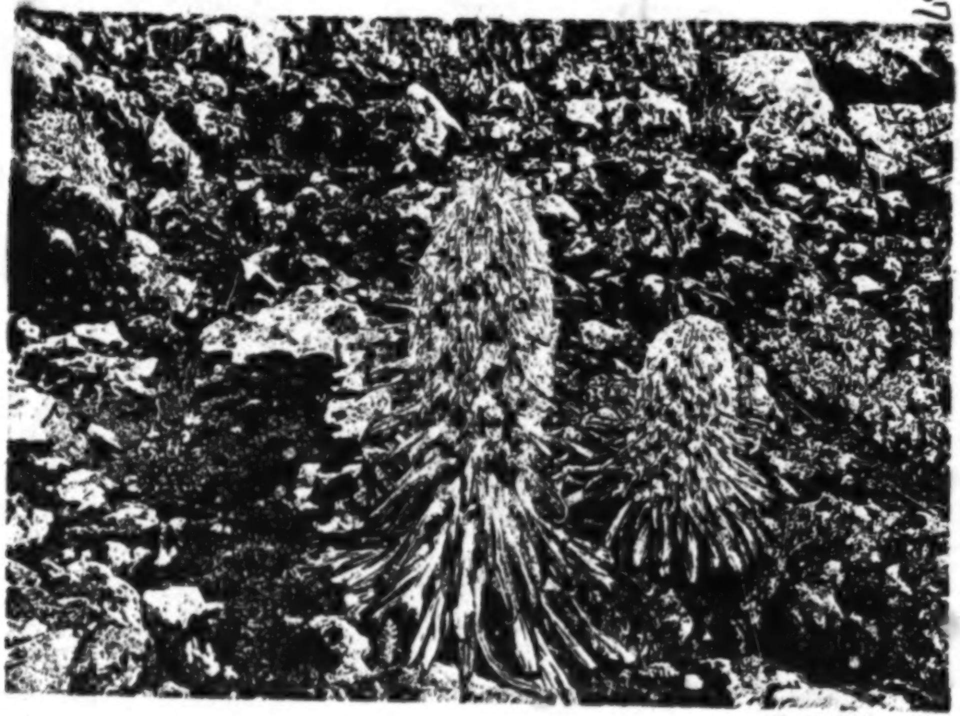
Lp. 140 [c]



(Courtesy Nat. Geogr. Soc.)

PLATE 67. — SAUSSUREA LANICEPS H-M.

The last of the alpine composites growing among limestone rocks at an elevation of 15,000 feet, at Khi-lü-p'u-dshwua, eastern slopes of the Yü-lang Shan.

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(Courtesy Nat. Geogr. Soc.)

PLATE 69. — THE ALPINE MEADOW OF MAN-DZU-GKV

In the foreground *Rhododendron Traillianum* trees with *Abies Forrestii*. The forested spur on the other side of the meadow is Ghügh-bö lo and the ravine in the extreme upper left Zhwua-k'o lo. Elevation 11,000 feet.

[p. 140 E]

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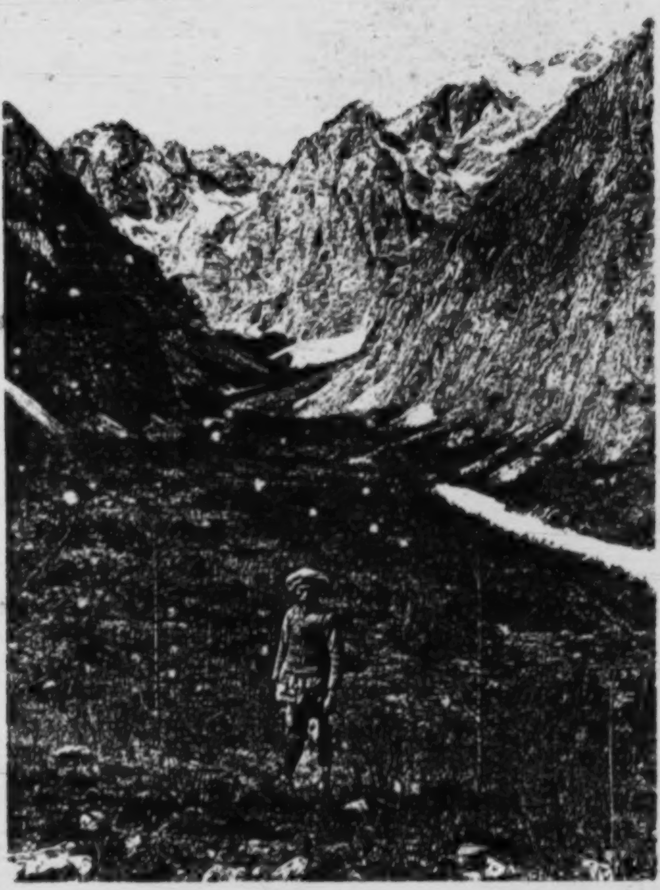


(Courtesy Nat. Geogr. Soc.)

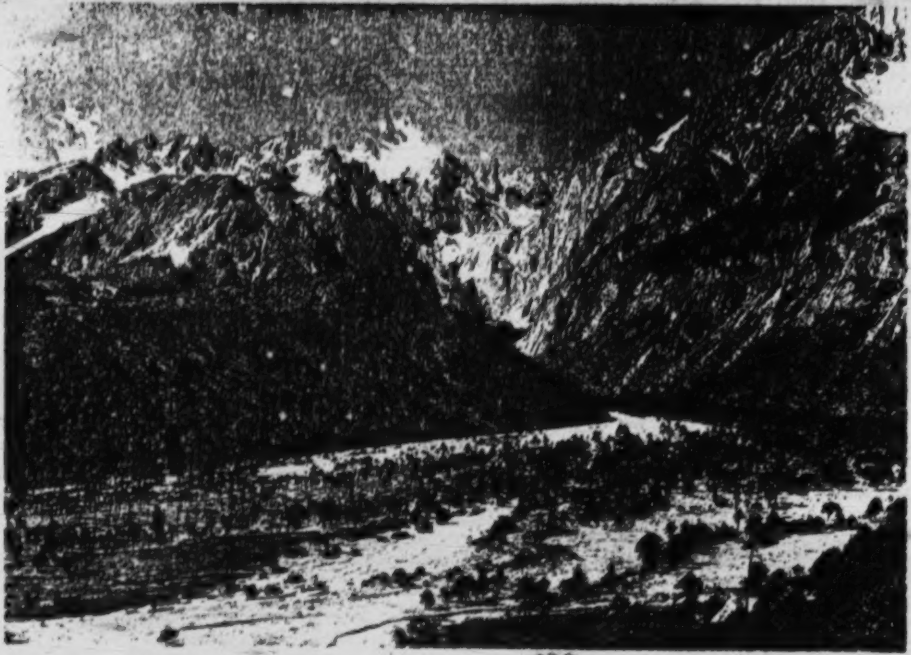
Plate 70. — The Gorge Sa-ba lo-gkv

[illegible]

The gorge which has no outlet was once glacier-filled; it is now waterless except in its upper part. Forest of spruce and Rhododendron which give way to firs higher up hill the gorge. The glacier in the upper right descends from the highest peak, Shan-tzu-tou, its snout is now at the extreme head of the gorge. Photographed from La-zo-gko-dshwua elevation 12,300 feet, and 300 feet above the floor of the gorge. The leafless trees in the foreground are larches (*Larix Potaninii*).

[p.140 F]

[p.140 G]



(Courtesy Nat. Geogr. Soc.)

PLATE 71. — THE SA-BA GORGE

[illegible]

The mighty gorge once filled with a glacier is now dry and the limestone floor is sparingly covered with *Pinus yünnanensis*. It extends east from about the center of the snow range, south of the Yangtze. A similar gorge (Gyi-p'ĕr k'a) but longer, extends west from the other side of the range in contraposition of Sa-ba; it is 2,650 feet lower than Sa-ba. The broad rocky mass above the pine-covered spur (left) is Ggŏ-gko 'a-k'ö; La-zo-gko-dshwuk is near the head (top) of the pine-covered spur whence Plate 70 was taken.

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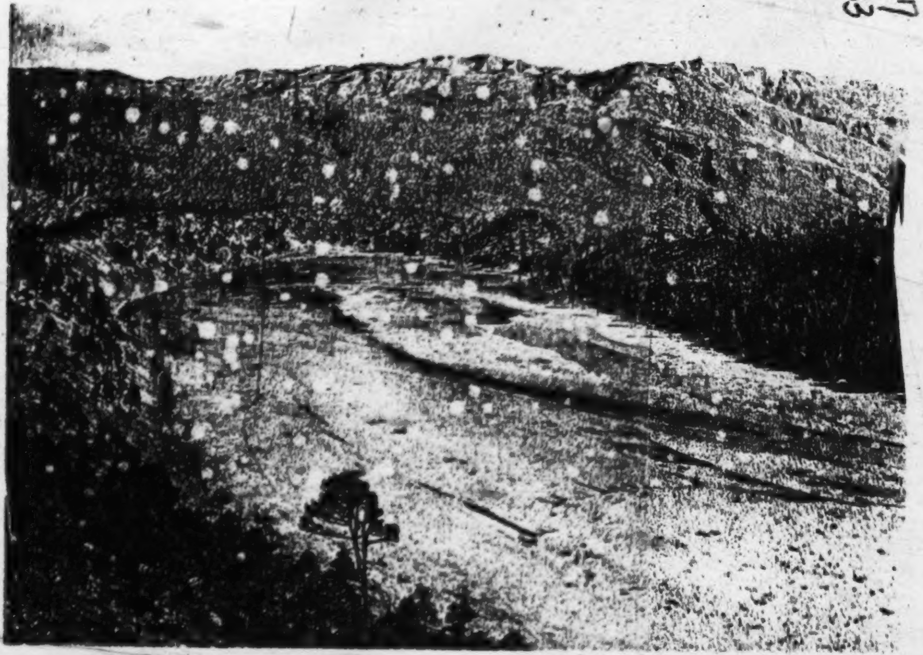
[p.140.H]



(Courtesy Nat. Geogr. Soc.)

PLATE 72. — SA-BA DÜ-LA-LO, THE NORTHEASTERN BRANCH OF SA-BA

The floor of this part of Sa-ba is composed of almost pure marl; the encircling moraines are covered with *Pinus yünnanensis*. The distance from Sa-ba lo-gkv, the head of the gorge, to the end of Sa-ba dü-la-lo is over three miles. The glacier which once filled this gorge has now retreated to its very head.

[p.140 M]

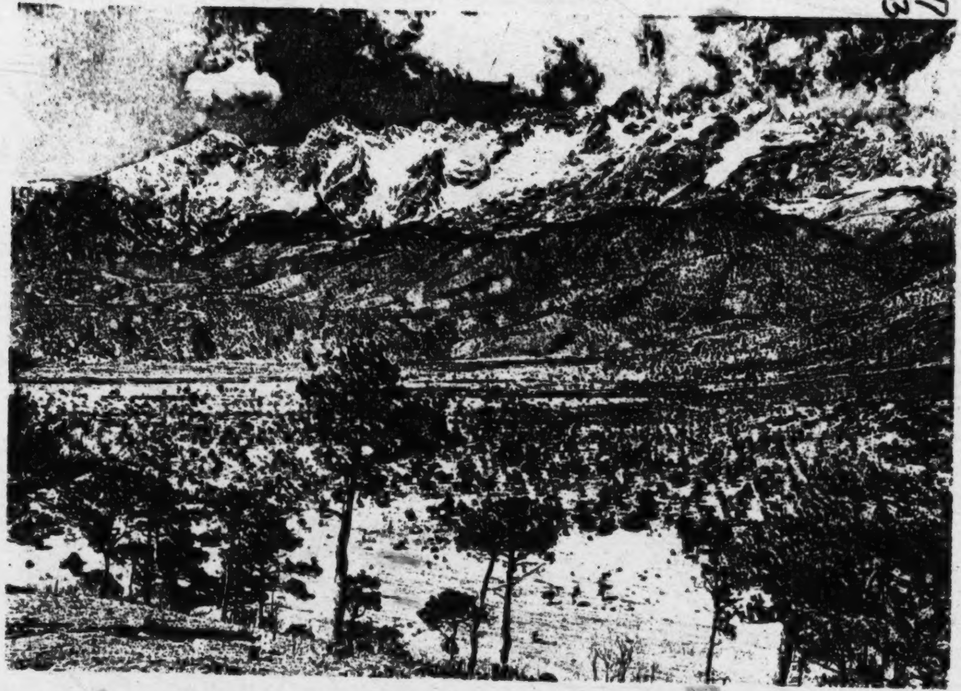


Plate 77. — Southern End of the Yü-lung Shan in Winter Snow

玉 龍 山 南 支 脈

View across the upper end of the Li-chiang plain from the eastern limestone range at Dza-dza mbu. The trees are all pines (*Pinus yünnanensis*). The first snow-covered crag (left) is Hua-lä-bpu. The others are called first half Nv-lv-na, the second Nv-lv-p'ĕr (black and white silver rocks) owing to the black and white scree which descend from the crags.

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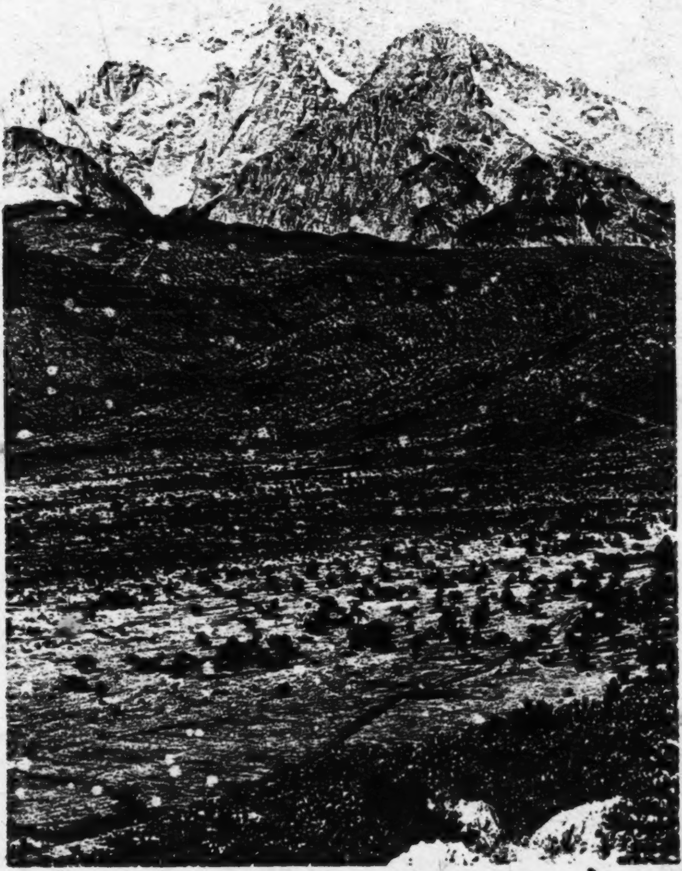


(Courtesy Nat. Geogr. Soc.)

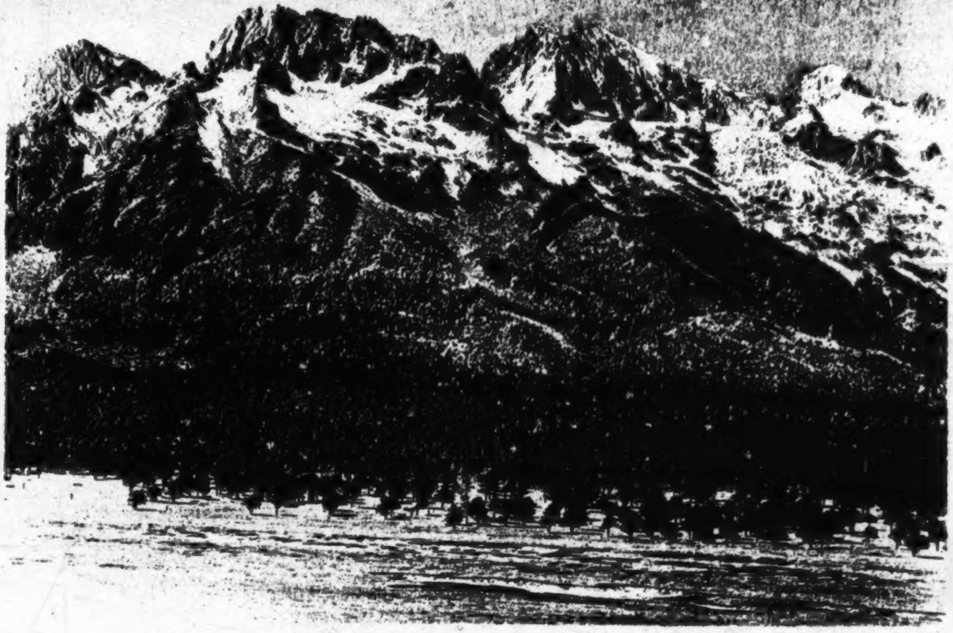
PLATE 78. — MOUNT SHAN-TZU-TOU

玉 龍 山 扇 子 陡

View from Dza-dza mbu (Dshi-hö gyi-ts'i) across northern end of Li-chiang plain and west to Shan-tzu-tou. The Sa-ba gorge is beyond the diagonal spur. Pine trees on plain; scrub oak and limestone in foreground. Where the lowest snow field seems to join the spur is La-zo-gko-dshwuà.

[p.140 N]

[p.140-0]



(Courtesy Nat. Geogr. Soc.)

PLATE 79. — NGA-BA, THE ANCIENT BED OF AN ICE LAKE

玉 龍 山 乾 海 子, 古 冰 湖 底 子

Situated at the foot of the eastern slopes of the Yü-lung Shan, elevation 10,500 feet. The trees on the grassy plain are pines (*Pinus yünnanensis*) which higher up give way to poplars (*Populus Bonatii*) and larches (*Larix Potaninii*). The first peak (left) is Ch'wua-lo-gku; the second Sa-ba nv-lv; the third Shan-tzu-tou. Note the man on horseback in lower right.

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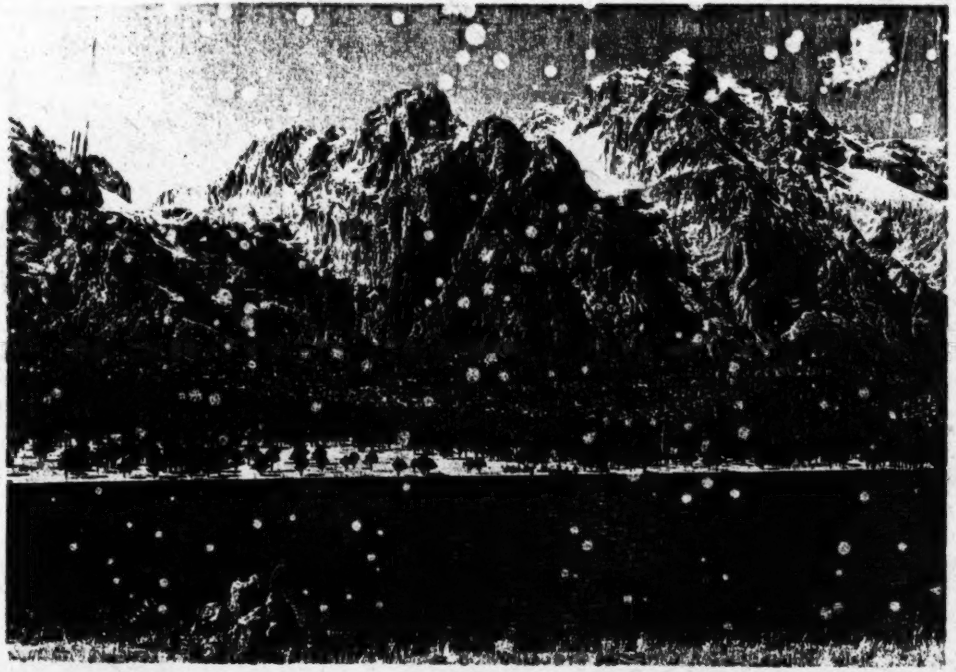
[p.140 P]



(Courtesy Nat. Geogr. Soc.)

PLATE 80. — NGA-BA TRANSFORMED INTO A BLUE LAKE

乾 海 子 變 爲 碧 湖

Only during summers of exceptional heavy rains does a lake form at Nga-ba; by spring, however, the waters disappear entirely. The author's camp can be seen on lake shore (center). The central peak is Nga-ba nv-lv; the last peak Gyi-nà nv-lv.

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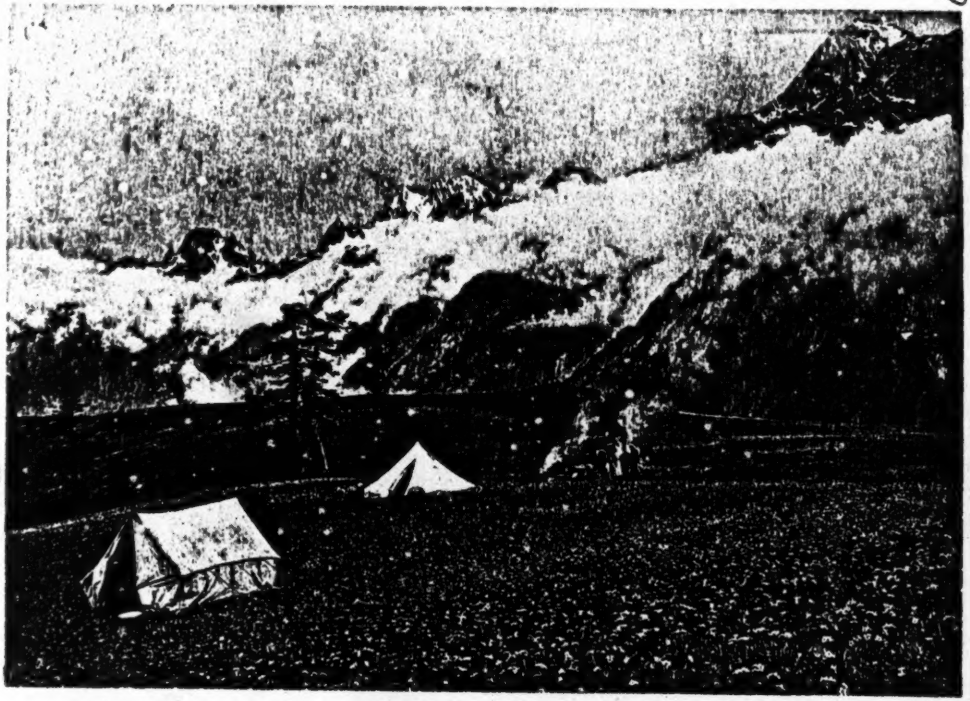
[p. 156D]

PLATE 84. — NDA-ZA GKO, THE LOVELIEST OF ALPINE MEADOWS

Situated on a spur overlooking Pai-shui, at an elevation of 10,700 feet. The mighty mountain mass Shan-tzu-tou with its glacier which feeds the Pai-shui, overshadows the meadow. Forests of tall spruces (*Picea likiangensis*) surround it. The author camped here for weeks translating Na-khi literature.

[p. 172C]



(Courtesy Nat. Geogr. Soc.)

PLATE 91. — THE ALPINE REGION GV-SSU-GKO DÜ-MAN

玉 龍 高 山 牧 場

The author's camp in a sea of Anemones, Primulas, ground orchids and other alpine flowers. The region was formerly covered with dense fir forest, a few trees have still survived. The peak in center is Shan-tzu-tou; the one in extreme upper right, Gyi-nà nv-lv. Photographed after a midday storm. Elevation 12,500 feet.

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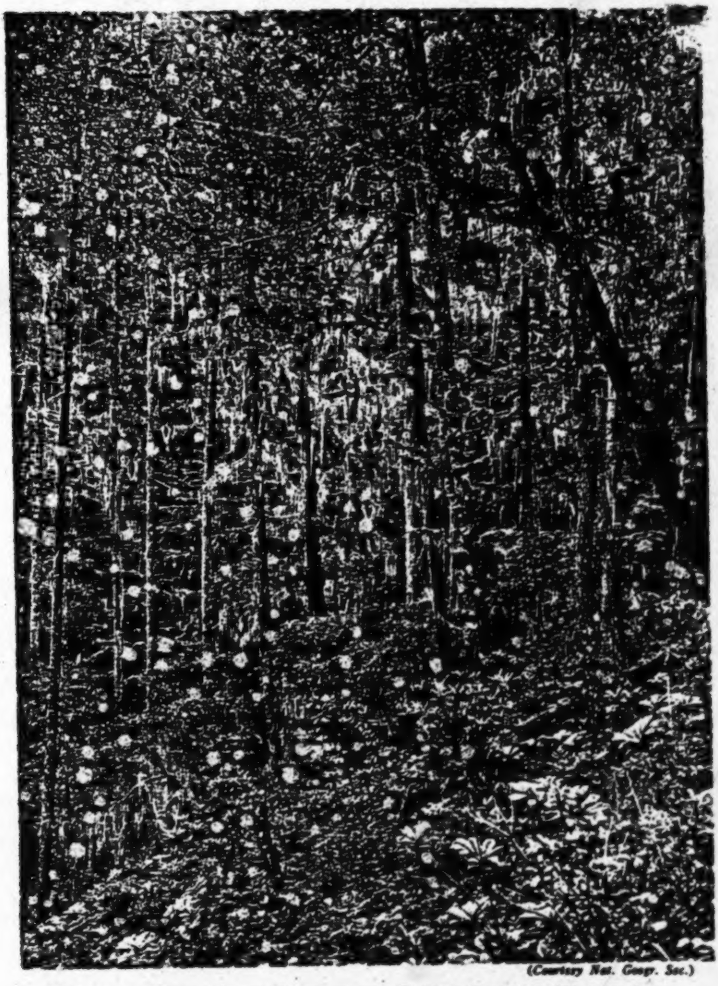

(Courtesy Nat. Geogr. Soc.)

PLATE 92.—VIRGIN, MIXED FOREST ON THE EASTERN SLOPES OF YÜ-LUNG SHAN

玉龍山東斜面混雜原森林

Forest of evergreen and deciduous trees covers the mountain slope between Hei-shui and Ta-ku at an elevation of 10,000 to 10,700 feet. The trees are mainly *Pinus yünnanensis*, *Pinus Armandi*, *Quercus semicarpifolia*, *Tsuga yünnanensis*, Acer, Sorbus, etc. The undergrowth is formed by *Rhododendron decorum* and *Rhod. rubiginosum*, Lonicera and *Rodgersia pinnata* (lower left). The lichen *Usnea longissima* festoons the trees.

[p.172 D]

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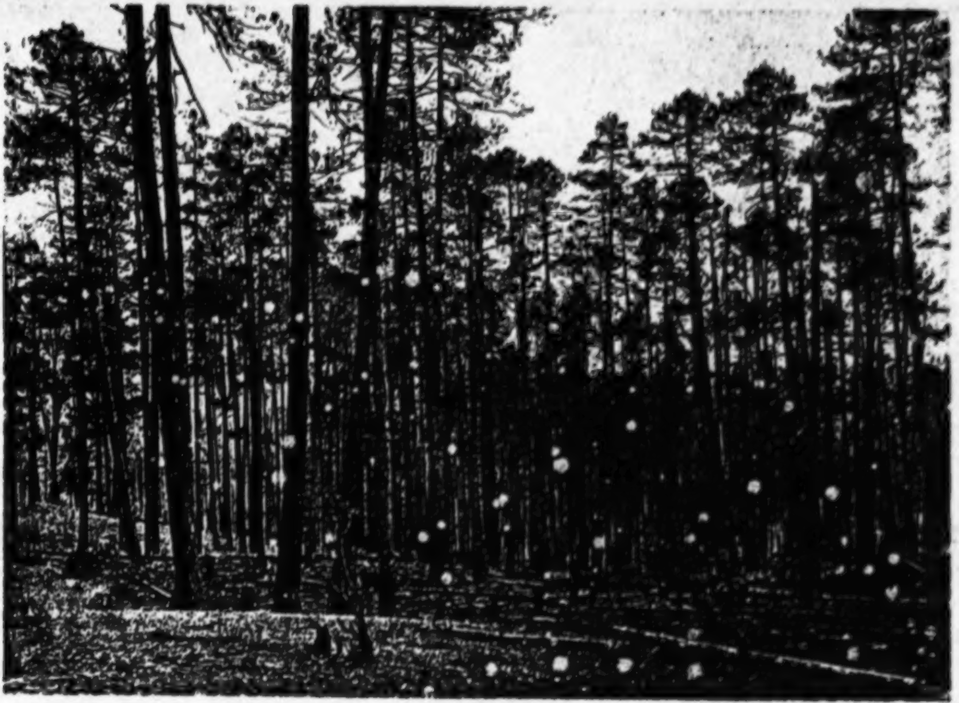

(Courtesy Nat. Geogr. Soc.)

PLATE 93.—THE PINE FOREST OF GHÜGH-T'O WANTONLY DESTROYED BY LO-LO TRIBESPEOPLE

[illegible] [illegible] 火 [illegible] [illegible] 林

Lo-lo squatters set fire to this forest which burned for weeks, enshrouding the land in clouds of smoke. The Lo-lo are the enemy of every tree, and wherever they settle they cause wanton destruction. Since the Lo-lo have been driven out some ten years ago, the forest is gradually coming back again.

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khi. The mountain is well known to the Tibetans, who call it Zhi-dag mug-po) 33 written gzhi-bdag-smug-po [in Na-khi Shi-zhi muan̲-bbu]; (in the Tibetan classic of the mountain god Dra-lha [dgra-lha] the mountain is called Jang-ri-mug-po [ljang-ri-smug-po ལྗང་རི་སྨུག་པོ], *i.e.*, the purple mountain of Jang = Mo-so); another Na-khi name for it is Sā-bpi a-na Ngyu. On this mountain [137] grows a bamboo from which the Na-khi (used to) cut their arrows. On its slopes there was once a temple called Ling-shou Ssu 靈壽寺, built by the Mu family [411] during the Ming dynasty. In the fourth year of Ch'ien-lung (1739), a lama, known as the Ssu-pao la-ma 四寶喇嘛, came with a retinue to pay his respects 778 to the prefect of Li-chiang, called Kuan Hsüeh-hsüan 管學宣. He induced him to subscribe funds and to have the priest, Ming Chü 明具, and others solicit funds for the building of the Wen-feng Yüan 文峯院 lamasery, or Wen-feng Wan as it is called in Yün-nan, situated on the slopes of the mountain.

Meng-hsi Shan 蒙喜山 is 50 li north-west of Li-chiang; at its foot was the 133 A-khi (A-hsi 阿喜) guard-house at the A-khi ferry across the Yangtze. The [505] mountain is terraced and is several ten li long, resembling a screen.

A-na Shan 阿那山 [6] is 270 li north of Li-chiang, on the southern border of the ancient Pao-shan chou 寶山州. This is the still more ancient Hsieh-lung 邪龍, so known during the Han dyansty (206 B.C.–A.D. 24), and in the present district of La-pao 剌寶 (La-bpu). On this mountain was an ancient stockaded village called A-na-ho 阿那和.

Lao-chün Shan 老君山 [7] is 250 li south-west of Li-chiang and rises high into the clouds; its height is 14,100 feet. It is north-west of the town of Chien-ch'uan, and is reckoned as the father of all the mountains of Yün-nan. A [312] powerful spring issues from it. It is believed that Lao-tzu 老子 once prepared the magic drug of immortality on this mountain — hence the name.

Wang-chiang Shan 望江山 is 80 li south-west of Li-chiang. The Shih-ku 石鼓 Ch'ung-chiang Ho 衝江河 [8] flows between Lao-chün Shan and Wang-chiang Shan, the latter being south of Shih-ku.

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[6] There is also a mountain, or rather spur, west of the village of Dü-gkv (at the head of the Li-chiang plain), which is called 'A-na-gkv.

[7] This mountain is also called Lo-chün Shan 羅均山 and La-chün Shan 剌均山. The *Yün-nan T'ung-chih*, ch. 22, fol. 5b, quotes these as synonyms for Lao-chün Shan. It also states that Lo-chün Shan 羅均山 is 20 li north-west of the old Lan chou district. Its ancient name is La-kou Shan 剌鉤山. The second character is apparently a misprint and should be *chün* 鈞. Five deep ponds are on its summit, and the natives pasture their yak on the mountain, hence it is also called Mu-niu Shan 牧牛山. It lies 250 li south-west of Li-chiang. On Lao-chün Shan is a *ling-ch'üan* 靈泉 (mysterious spring); as the water flows down the mountain it is called Lao-chün Ho 老君河, another name for it being Shih-lai Chiang 石萊江. From the eastern slopes issues the source of the Chien Hu 劍湖 (Chien-ch'uan Lake) — this being merely a tributary of the Yang-pi Chiang. The *Yün-nan T'ung-chih* states that both waters flow into the Chien-ch'uan Lake. This is, of course, not so for they flow into the Yang-pi, and the Chien-ch'uan Lake has an outlet into the Yang-pi south of Chien-ch'uan.

[8] It is also written Ch'ung Chiang 沖江. The stretch from where it flows west to east is called La-pa Ho 拉巴河 (La-ba gyi in Na-khi), as one branch of it has its source in the La-ba Ngyu (La-ba-gko Mountains), called in Chinese La-pa Shan 拉巴山, west of Shih-ku. In Na-khi the mountain is called La-ba Ngyu after the village of La-ba, the Chinese Shih-ku.

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PLATE 130. — PINE FOREST IN THE HA-BA DISTRICT

哈 巴 森 林

Unlike the Lo-lo, the Na-khi are lovers of trees and disturb the forests as little as necessary. The trees are *Pinus yünnanensis*.

[p. 220J]

[p. 220 M]

PLATE 133. — THE MOUNTAINS OF GKÜ-DÜ NORTHEAST OF BBËR-DDËR

The range is snow-covered in winter only and its highest peak is 15,420 feet. Photographed from near T'khi-dtü in Ha-ba, elevation 9,000 feet. The forests are composed mainly of pines and oaks.

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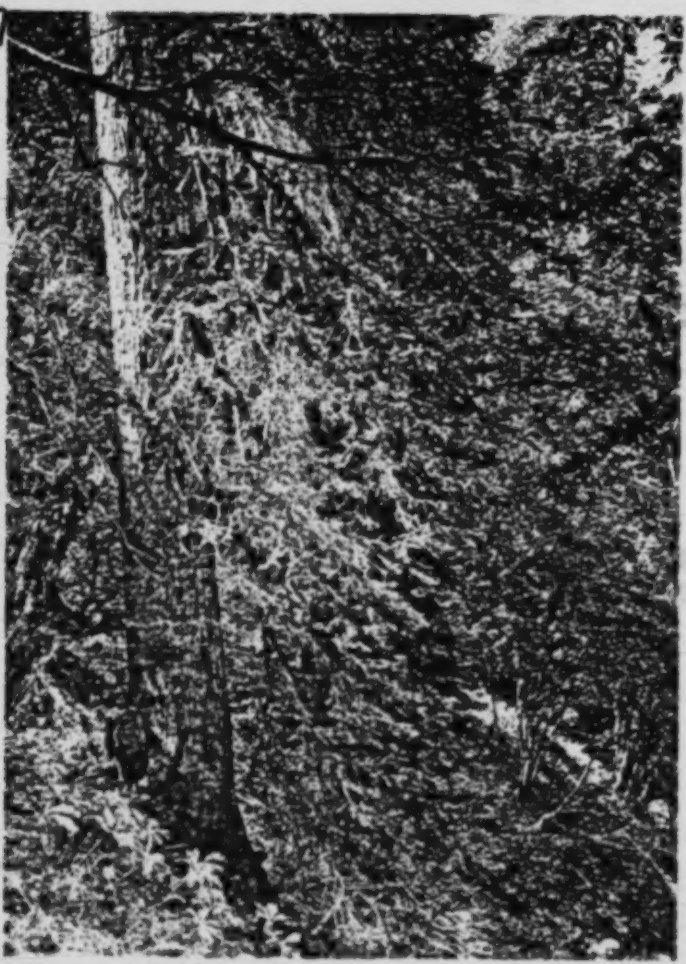


(*Courtesy Nat. Geogr. Soc.*)

Plate 184. — Abies Chensiensis, the Tallest Conifer below the Si La

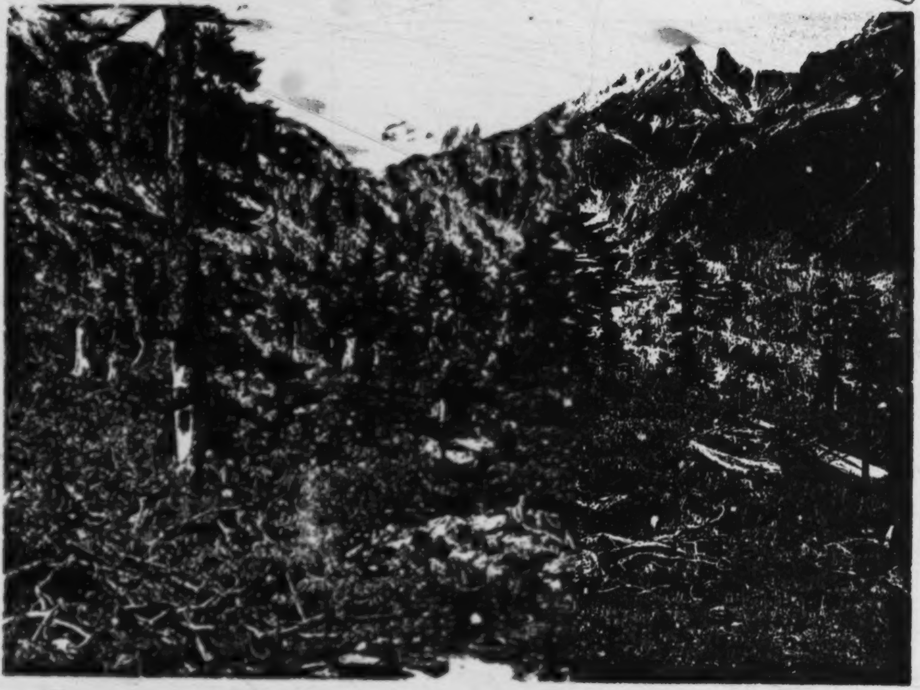
大 杉 樹 夕 拉 下

With Birches, Hemlocks (Tsuga), Maples and many other trees, this magnificent fir forms lovely forests on the eastern slopes of the Mekong — Salween divide at an elevation of 9,000 to 10,000 feet.

[p. 330 P]

137

[p.362A]



(Courtesy Nat. Geogr. Soc.)

PLATE 185. — FIRS AND RHODODENDRONS BELOW THE SI LA

夕拉下[illegible]

At an elevation of 12,000 feet, at the foot of the Si La we meet with pure stands of *Abies Delavayi* with undergrowth of *Rhododendron levistratum*. The snowy pyramid in center is Mt. Ira-chhen which flanks the Zhi-dzom La. Eastern slopes of Mekong — Salween divide.

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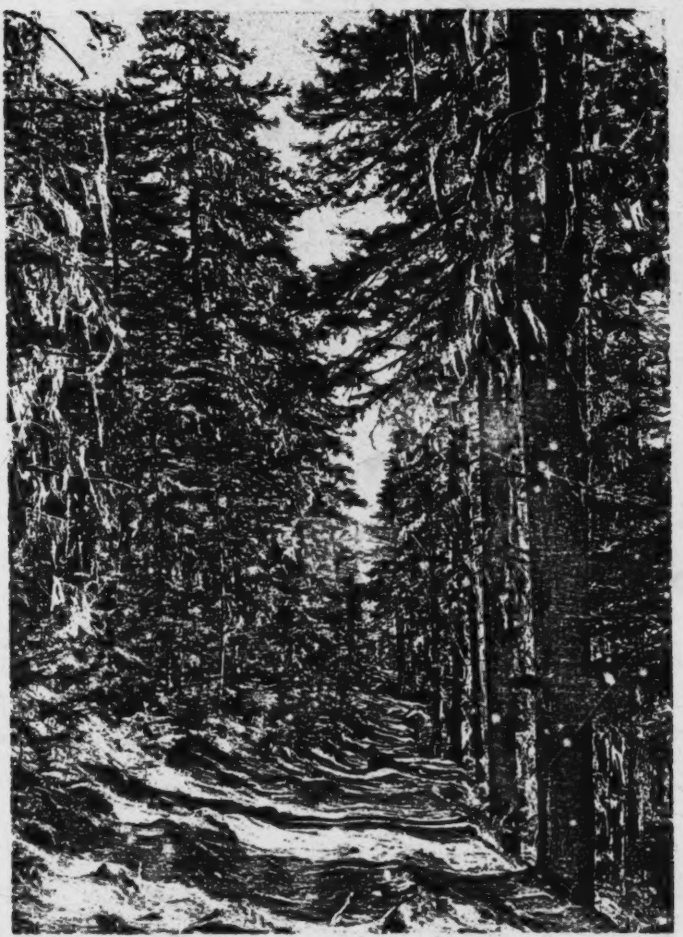

(Courtesy Nat. Geogr. Soc.)

PLATE 206. — THE ROAD TO TUNG-CHU-LIN THROUGH MAGNIFICENT SPRUCE FOREST

東竹林路虎尾樅林

Picea complanata with *Rhododendron Wardii* as undergrowth forms pure stands at 12,000 feet, north of Tung-chu-lin Lamasery. *Usnea longissima* festoons the trees.

[p.394-F]

137

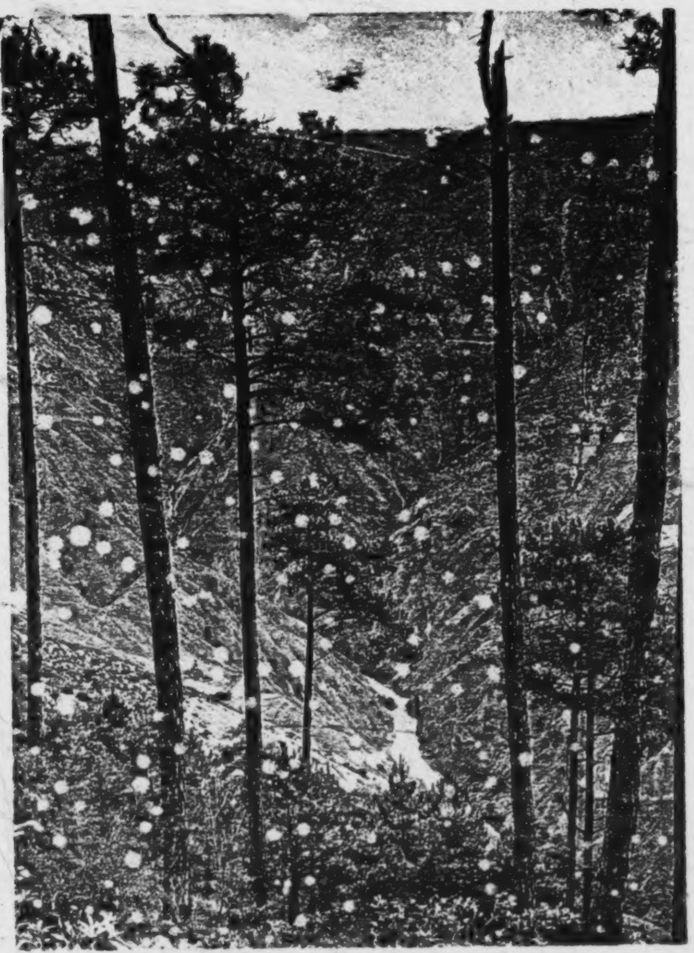

PLATE 218.—THE EASTERN BRANCH OF THE WU-LIANG HO OR ZHO CHHU IN MU-LI TERRITORY

木[illegible]方無量河東支流

The Zho Chhu or Shu Gyi of the Na-khi has its source at Na-pu and flowing parallel to the Li Chhu or Li-t'ang River, joins the main Wu-liang Ho some ten miles above its confluence with the Yangtze; *see* Plate 105. Photographed from an elevation of 12,000 feet, between the villages of Ga-ro and Dze-ru, Mu-li Territory

[p.410-J]

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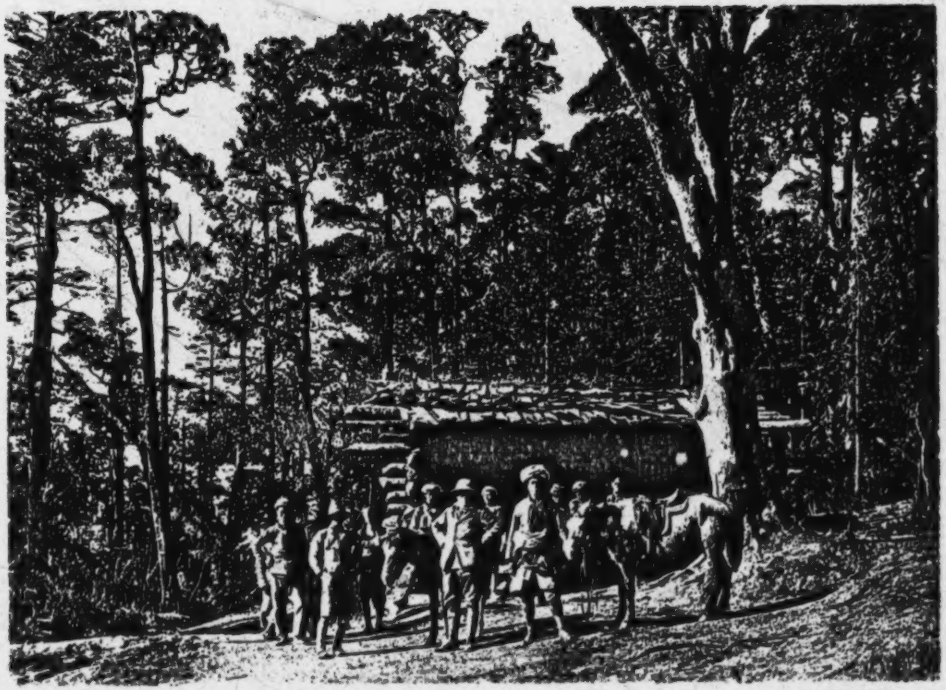
[p.426-F]



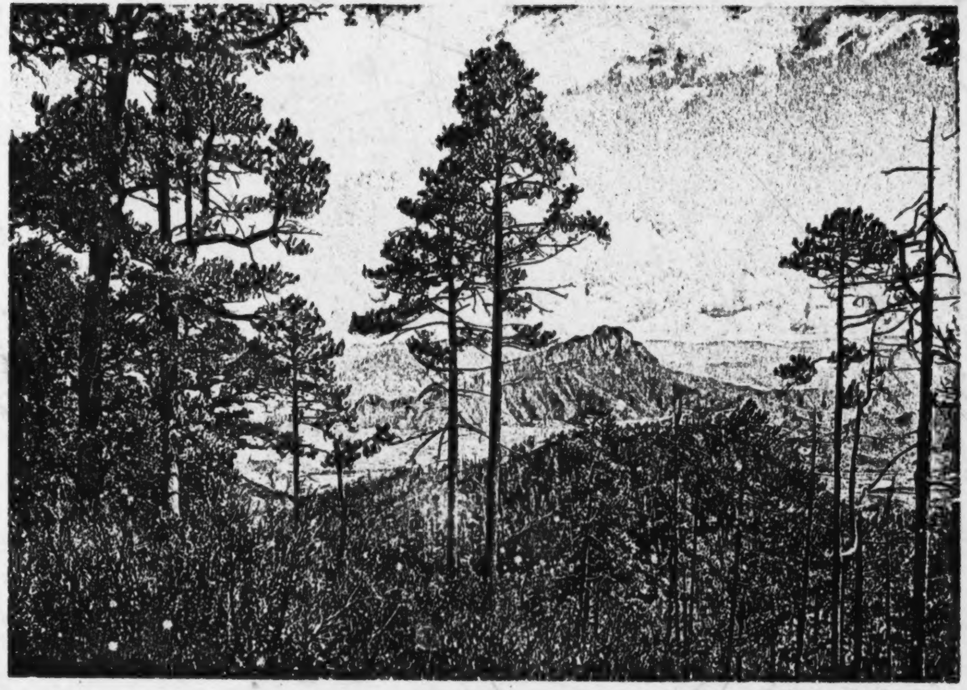
(Courtesy Nat. Geogr. Soc.)

PLATE 230. — YO-WA-BU PASS OVER THE TA-YAO SHAN

永 寧 大 樂 山 山 口

The author's entourage on Yo-wa-bu Pass in front of the Li-su guard station. It is the most important pass over Ta-yao Shan, on the caravan route to Yung-ning from Feng-k'o, on the Yangtze.

[p.426 M]



(*Courtesy Nat. Geogr. Soc.*)

PLATE 237. — VIEW OVER YUNG-NING AND LION MOUNTAIN FROM EAST OF TO-KA-BO PASS

自永寧西山頂東面, 獅子山背景

Photographed looking east from an elevation of 12,200 feet. A trail leads here west over To-ka-bo Pass to Hĕr-dü and San-chiang-k'ou at the apex of the Yangtze loop. Pines, spruces, poplars and rhododendrons in foreground.

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[p.426 P]

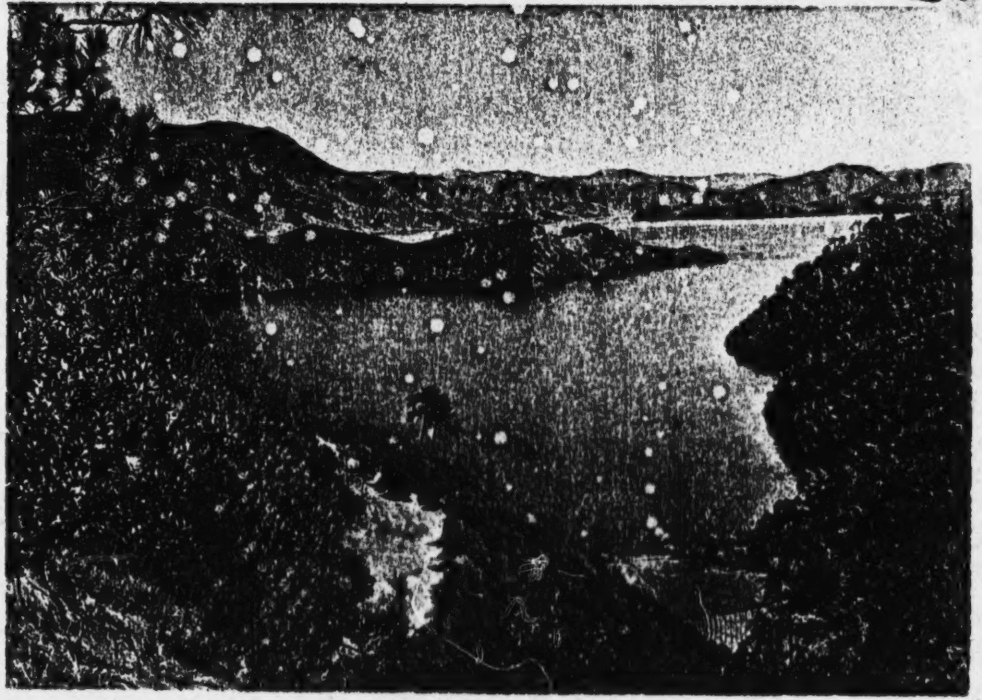

PLATE 240. — THE NORTHERN SHORE OF YUNG-NING LAKE

永寧瀘沽湖北岸，左所[illegible]背景

The trail in the foreground leads to the village of Hli-ki near the foot of Lion Mountain. The Yün-nan — Ssu-ch'uan border is beyond (east) the long, wooded peninsula. The trees covering the lake-encircling hills are mainly pines and oaks. Tso-so T'u-ssu territory in the background.

173 more adjacent to that territory, being separated by the district of Yung-ning].
131

The smaller district of to-day (1893). — "This proves that the district of Yen-yüan includes only parts of other districts and that its frontiers do not extend to those of ancient times. In fact it rules over only part of its former territory.

"The ancient people of Kua-pieh are called by the Ning-fan 寧番 the Shui-wai Sheng-fan 水外生番 (wild savages outside the river [either the Yangtze or the Ya-lung must be meant here]).[23] The people of Tso-so were Ma-la-fei's 馬剌非[24] peasants who were hated by Yung-ning. The Chung-so, Lang-ch'ü, and the Mu T'u-ssu of Li-chiang had disputes regarding boundary lines; the senior native officials of the above mentioned places had also occasional quarrels among themselves."

4. CONFIGURATION OF YEN-YÜAN

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"Junipers[25] grow on all the lofty peaks of the district of Yen-yüan, giving the latter a blue-green tint. The dragon-like rivers flow zigzag over its land. This district is situated between the Yün-nan and Ssu-ch'uan boundaries and here the Chinese and tribespeople live in contact.

"The land of Chiung 邛 and of Chiang 絳 is related to this district in the same way as lips are to teeth, while the Liao and Man tribes are as near to it as the fingers to the arm.

"Its passes over the lofty peaks, covered with fragrant junipers, can safely be guarded by one man. Salt and copper are its chief natural resources.

"Yen-yüan is the capital and cross-road of the Chiu-so 九所 (Nine military sub-stations). [Under Chiu-so must be understood the Five *So*, as well as the chieftains of Kua-pieh, Ma-la, Ku-pe-shu and Mu-li.]

5. ACCOUNTS OF YEN-YÜAN AND ANCIENT PLACES

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No-chi. — "The city of No-chi 諾濟 was west of Yen-yüan hsien. It was established during the T'ang dynasty. At the close of the period T'ien-pao 天寶 (751) it was captured by the T'u-fan. In the 15th year of Cheng-yüan

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[23] The Ning-fan are the inhabitants of Ning-fan Wei. The region was surrounded by the Hsi-fan tribe who dwelled there, therefore the Military Station of Ning-fan was called Ning-fan ch'eng 城. All the inhabitants were known as Ning-fan-man.

During the Yüan dynasty there was established a fu-city which was called Su chou 蘇州 in the wild parts of Chiung-tu 邛都. A native (Mongol) official of that region, by the name of Yüeh-lu-t'ieh-mu-erh 月魯帖木兒, rebelled, and there was then established the Military Station of Ning-fan. This was in the 27th year of Ming Hung-wu (1394).

Su chou was the territory at present governed by Mien-ning hsien. Ning-fan Wei was governed by the Ssu-ch'uan Hsing-tu-ssu 行都司. There were two classes of Fan savages — Sheng-fan (wild, raw, savages) and Shu-fan 熟番 (the ripe savages who had submitted to Chinese rule).

[24] This should read La-ma-fei, he was the son of La-t'a or La-wu, who ruled over the Tso-so territory 300 li south-west of Yen-yüan hsien.

[25] Probably *Juniperus Wallichiana* or *J. formosana.*

3: Hutson M-5 (no date) 1921 AF16 Southwest China AF16

frighten away the evil dog. All the temple drums and gongs 805 are lustily beaten till the eclipse is ended. 796

The year that the Emperor Kuang Hsü died, the people declared that the sun had become red like blood, which indicated that the dynasty had come to an end, or that some great change was about to take place. 821 777

A comet is a very unlucky omen ; and the appearance of Halley's comet in 1910–11 brought with it a great deal of unrest and fear. The people believe that it indicates calamity such as war, fire, pestilence, and a change of dynasty. In some places on certain days the doors were unopened for half a day, no water was carried and many did not even drink water as it was rumoured that pestilential vapour was being poured down upon the earth from the comet.

Along with eclipses and comets comes a third herald of 825 change, namely, the bird called the white-tailed swallow. It is said that when the Manchus took China this bird came and killed the canaries and took possession of their cages. In 1911 it is reported to have made its appearance in Ssŭch'uan, and when possible it was caught, beheaded, dismembered and thrown to the four winds, as it indicated another foreign invasion of the country.

SNAKES AND DRAGONS (蛇龍), *shê lung*

The snake is an object both of loathing and reverence 137 among the Chinese. In Ssŭch'uan there are many kinds, of 825 different colours and sizes. It is said that the small are snakes (蛇), the medium serpents (蟒), and the large are dragons (龍). A few of the different kinds of snakes as known by the Chinese are herewith given :—

Sang kên tzŭ (桑根紫), or *ch'êng kan shê*, the steelyard snake, is red with spots and is very deadly.

Ts'ai hua, the rape-flower snake, a yellowish coloured snake from four to eight feet long and very poisonous.

Ch'ing chu piao, the green snake, just the colour of a green bamboo stem. It is from four to eight feet long and less poisonous than the former ones.

3: Hutson M-5 (no date) 1921 AF16 Southwest China AF16

625 The speckled snake, *ma pan* (麻斑), believed to be poi-
137 sonous.

Wu shao (烏稍), a grey snake, reckoned to be poisonous.

Wu pang (蜯), a grey tailless snake or one whose tail does not taper like the other species. It boldly faces men and when attacked shows no inclination to flee.

825 *Chüeh shê* and *shou kung* (守宮), the lizard. The Chinese fear these entering the tea-cups and leaving poison.

The snake's body is very cold, its teeth of the finest, its bite the most venomous. On seeing it every Chinese gets a fright, and generally speaking the belief is that they should be killed, with exceptions which will be given. The saying runs that if you see a snake and do not kill it, in the next life you will be dumb. Snakes in private homes and temples must not be killed. Those in private houses are believed to be the spirits of the ancestors come back in this form to present themselves to the family, and incense is often offered inviting them to go.

Those in temples are called *shên shê*, spirit snakes; it is said that the god of literature and the city god are snakes and come to receive the incense at the altar. It is said if one goes very early to the bedroom of the city god in his temple one will find two snakes asleep on the bed.

Besides this 眞武足踏龜蛇, the *chên wu* idol or *Liu Ch'ang shêng* has his foot on tortoise and snake, that is, he is able to subdue them.

Country people declare that by suddenly entering a bamboo grove a snakes' gathering, *shê hui*, may be seen; but on being disturbed they flee in all directions.

Snakes have a propensity for stealing living creatures such as chickens, rabbits, etc., and in so doing it is believed that the ancestor is only taking his due. Such are some of the ideas which run in the minds of the people regarding snakes, and we now turn to the king of the scaly tribe. The dragon bore nine sons something as follows:—

Hsieh chai (獬豸), a fabulous monster like a deer, which it is said can discriminate between right and wrong.

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Photo by Captain W. A. Watts-Jones

Coming down to the Salween valley

Plate XII

[Face p.54]

Pai-i AE7

S
133 Lu Chiang, the Shans the Nam Hkong, and our name for
S it is a corruption of the Burmese name Than-lwen. It is
491 crossed by another of the iron chain bridges, in this case of two spans, the only two-span bridge of this sort in the province as far as I know. The construction of the pier in the middle is assisted by the fact that the westerly span, which is 50 yards long only, crosses what is in the dry season chiefly shingle with a shallow stream running over it. The eastern span, 80 yards in length, crosses the main part of the river. The bridge has naturally been built at the narrowest place possible, so that 80 yards must not be taken as a fair estimate of the breadth of the Salween in this part of its course. Above and below the bridge its width varies from 100 to 160 yards. It has a fairly strong current and must be very deep in the middle.

At the time the bridge was under repair, and we had to cross by ferry two miles lower down. They were removing the stones of the pier to look at each chain and see whether it wanted replacing. The repair of the bridge is not under-
S taken by the Chinese Government, but is paid for by a
501 subscription got up by the merchants of T'êng-yüeh. It was noticeable that the ferry was worked by five bamboo
S rafts specially constructed for the purpose: there is not a
133 single boat in the plain. The Salween, like so many other Yünnanese rivers, is useless for navigation. There are quiet stretches where it would be quite possible, but the frequent occurrence of rapids would prevent boats from going more than a few miles.

We crossed the river and camped on the opposite bank at a height which my boiling-point thermometer made 2,200 feet, by far the lowest elevation anywhere in this
S part of Yün-nan. The climate was consequently at this
P time of year very pleasant, not hot in the daytime, and
137 not too cold at night. The vegetation was entirely different
101 from that of the country we had been passing through.
S Banyans, plantains, and other trees and shrubs peculiar to
P the warmer climates of Burma and the Shan States are to
131 be found everywhere. The valley is in fact inhabited by Shans who call the plain Mong Hkö and are ruled by a sawbwa who lives a few miles below the bridge. This is practically the limit of the Shan race in this direc-

000 shed at 5,600 feet, one of the lowest points in this part of
the range. From here we went by an equally gradual descent
S to T'ou-tao-shui, a little village in which a market is held
733 every five days. The small official in charge of the police
here came to see me in the evening somewhat the worse
for liquor, and I saw three or four other men in the same
state, rather an unusual sight in China. Most Chinamen
drink rice spirit, but they seem to know when they have
had enough, and one seldom sees a drunken man.

From T'ou-tao-shui there are two roads on to Kun-long.
The most direct route passes through Mêng-lai, but I took
a longer and better road round by Mien-ning. The next
day we had an easy march to Yi-wan-shui, and on the 20th
we slept at La-tien-p'o, a village which lies on the Mêng-
lai Ho, the main source of the Nam Ting. Still following
S up this stream we reached Mien-ning T'ing on the 22nd.

133 Since leaving Shun-ning the country and climate had
been gradually changing, and we were now in a district
more resembling the Shan States than the higher part of
China we had hitherto been travelling in. The elevations
S of the hills are much lower, the climate considerably warmer,
●[137] and the whole country is covered with jungle of a semi-
tropical kind instead of the bare hills and pine forests of
the districts further north.

S
361 The Mien-ning plain is some seven miles long by three
miles wide. The town is built near the southern end of it
on the left bank of the Mêng-lai Ho, a stream 30 yards
wide and three or four feet deep, which runs down the
middle of the plain from south to north. There is a great
deal of vacant space inside the walls, and the town contains
only 200 houses, but it is surrounded on all sides by suburbs
amounting to another 300 or 400. The largest suburb is
on the east, and this appears to be the chief commercial
quarter, such as it is. The inns are miserable, and I found
quarters in a good-sized temple, built by the Ssŭ-ch'uan
F residents of the place.

177 Mien-ning is always pronounced Mien-ling by the
inhabitants. It was originally a Shan state, and its proper
Shan name is Möng Myen. There are still a great many
of this race living here, but the Chinese are now in the
majority, and the Shans are taking very much to Chinese

elevation here is only 2,500 feet, and the day was very 000 close and hot with a thick mist which made surveying difficult. After crossing we ascended 1000 feet to Ch'ou-shui to camp.

The next day, 1st April, we crossed the river which, coming from the town of P'u-êrh, flows into the Wei-yüan Chiang a little below the crossing. It is here 30 yards wide and easily fordable in the dry weather. In the rains, however, it often becomes impassable, and, as there is no boat, travellers have nothing to do but to exercise patience S [137] and sit down on the river bank till the flood subsides. The hills about here were covered with wild raspberries just ripe, a yellow variety very common in the Shan States and in some parts of Yün-nan.

The next day we passed through the little village of S P 563 Man-mu which is inhabited by Shans who came here from the province of Chiang-hsi seven generations ago. Their P 197 language is distinctly Shan, but it is a peculiar dialect and they have some difficulty in making themselves understood by the others of their race in the neighbourhood. They say they do not know why they came here and that they are the only Chiang-hsi Shans[1] in this part of the country. But they are quite positive that they did come from Chiang-hsi, which they describe as being three months' journey away.

That night we slept at the Lo-lo village of Na-ku and the next day, the 4th April, an easy march brought us into Ssŭ-mao.

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[1] The Chung-chia of Kuei-chou are stated to be a mixture of Shan and Chinese, their ancestors on the Chinese side of the family having been soldiers who were natives of Chiang-hsi. It is possible that the villagers of Man-mu are Chung-chia who have emigrated here, but they did not tell me that they came from Kuei-chou.

000 however, does not go down to it, but turns in a more westerly direction to Ning-kram, a Kachin village of the Maran tribe. The Kachins were somewhat surprised, as they naturally did not expect to see a European travelling about here, but I had no difficulty in convincing them that it was quite a friendly visit. The last time we had come across Kachins was on the 11th January, the day that we marched into Chan-hsi (San-si). This race is only met with near the Burmese border; they do not extend any distance into the interior of Yün-nan.

487 Our road the next day crossed the Nam Wan a mile or two above the head of the Möng Wan plain and then passed over another range of hills into the Ho-hsa valley. I had sent on to say I was coming and was most hospitably received by the sawbwa, who was then living in his old
[136] capital at Se-kow. I found a good many spot-billed duck in the flooded rice fields here and also saw one snipe.

I could not spare the time to accept the sawbwa's invitation to stay on here a day or two, and started again the next morning, accompanied for part of the way by his eldest son. The range between the Nam Wan and the
[137] Taping is crossed at 7,400 feet. Here I found a very nice sort of white wild strawberry growing, quite different from the tasteless red variety that one usually finds in this country. We descended into the Taping valley and crossed the river at Nawng-hsai ferry: it is 500 yards wide here, but at this time of the year not more than half the bed has any water in it and it is shallow enough to be fordable. We slept the night at the Shan monastery at Man-waing
[206] or Man-yün. Since my last visit, telegraphic communication had been established by Mr Jensen between T'êng-yüeh and the Burmese frontier, and I found a telegraph station established here and was once more in touch with the outside world.

On the 15th of May we reached the frontier fort of Nam-paung, and in two more marches did the 32 miles which separate this post from Bhamo.

5; Davies G-5 (1894-1900) 1909 AF16 Southwest China AF16

my Chinese servant behind here as he was suffering from 000
bronchitis and fever, brought on, I believe, by the rainy, misty weather which is most unusual at this season of the year. I found him quite recovered.

I now turned towards Yung-ch'ang Fu, but determined to keep in unexplored country by taking a route some way to the north of the T'êng-yüeh Yung-ch'ang main road. The mountain range which separates the Shweli from the Salween valley is here a very high one, nearly precipitous at the top so that there are only a few paths across it. I decided to take one known as the Ma-mien-kuan pass. This being rather an out-of-the-way road, I had all the usual stories told me to try and dissuade me from going that way. The tales this time took the form of accounts of 137 ●
the deeds of Li-so robbers and a description of a sort of poisonous shrub which would kill the mules if they ate it. This last has, I believe, some foundation, as the shrub was pointed out to me on the pass, but I cannot imagine that animals would eat it if there was any grass to be got. The 000
pass has evidently a bad name as I had great difficulty in getting a guide. Only one man would come, and I had to pay him at the exorbitant rate of 10½*d.* a day.

It was not till the second day out of Kai-t'ou that we tackled the pass. From Shan-yao where we had slept, there is a pretty stiff climb to begin with, and then some down hill before the really bad part comes. In the last two miles there is an ascent of 2,500 feet to the top of the range, which I made about 10,500 feet above sea level.

Just before reaching the summit is a Buddhist monastery, 792
where four or five Chinese monks live who give food gratis to travellers and look out for people who miss the road in the snow, which often falls heavily in January. They have [346]
a very substantial house, the lower story built of stone and the upper of wood. As a special favour I was taken into the inner court by the head monk, who said he did not usually let people inside. The door from one court to the other in the lower story is barred up by great beams, and to get in we had to climb a ladder, go round the upper storey, and get down again inside. This, they say, is a precaution against Li-so robbers. The monastery was extra-

S. Davies G-5 (1894-1900) 1909 AF16 Southwest China AF16

000 Leaving Möng Ti, we took two marches over a hilly and in places forest-clad country to arrive at Hsi-la, a village in a narrow paddy plain, whence a road to Shun-ning branches off from our route. This, like most of the neighbouring villages, is inhabited by Chinese, but we also saw some of the Miao tribe near here, and they told us there were a good many of their race living in the high range to the east.

We were now well out of the barren dried-up hills which are characteristic of the Chên-k'ang State, and our march from Hsi-la lay through pleasant woods of fir and other trees, alternating with well-cultivated hillsides. After ascending some way, a narrow gorge with precipitous hills on either side brought us to the top of the Salween-Mekong
• 137 watershed, at a height of 6,600 feet. With a few more miles of steep up and down over rough rocky ground we reached Ta-li-ssû, a little village in a steep-sided valley, where we found shelter in a temple. One discovery we made on this march was two trees growing among the fir forests which Ker recognised as cork trees. They were both young trees, 20 feet high or so, and we could not find any more, though it is true we had not time for a very thorough search.

000 The next day, the 10th February, was the Chinese New Year, a day on which no Chinaman will travel if he can help it. Our own followers having no friends in this out-of-the-way spot were quite willing to march on, but the difficulty was to get a guide. After much conversation we managed to engage a lad at the exorbitant rate of sevenpence for the day's work. He was not very willing to come, but his father, probably with an eye to handling some of his son's wages, said, "What's the use of your talking about keeping the New Year when you have got no money to keep it with?" and so the bargain was clinched.

We continued our journey through a fine hilly country, fording the Ya-lang Ho, a beautiful stream flowing through wooded banks. The population of these parts is very varied. The P'u-mans are the most numerous, and there are also Chinese, Lo-lo, and Miao villages. These P'u-mans, like other communities of this tribe that I have met, have forgotten their own language, and in this instance

316 Like Wei-ning the chief importance of Tung-ch'uan lies in its mines. I had not time to visit any of these, except those at Kung-shan, but there are several productive copper mines in the district.

132 The height of the town I made 7,250 feet. It is a cold place, with a climate more cloudy and rainy than the parts of Yün-nan lying further to the south or west of it.

000 My route from here on to Yün-nan Fu took me along the main road which connects the Yangtze at Sui Fu with the capital of Yün-nan. I was here again out of unexplored country, as Doudart de Lagrée, Baber and others, not to mention many missionaries, had travelled the road before me. I still kept up the survey as no very satisfactory maps had been made of this country.

Turning off from the Tung-ch'uan plain near its western
end, our road led us up the Yi-li Ho by a narrow valley
505 with hills rising to 9000 feet on either side. This river is
30 or 40 yards wide and is fordable in many places, but
is deep enough to be navigated by boats which bring down
timber and firewood to supply Tung-ch'uan.

000 Up this valley we marched for two days and then ascended very steeply on to a ridge and along it, the highest point reached being 9,300 feet. To the north-west a long distance off two very high peaks were visible which I estimated at 14,000 feet. We had now got on to a bare plateau country with considerable stretches of flat ground and small hills rising 300 to 500 feet out of it. We slept on the 5th May in the large temple of the village of Lai-t'ou-p'o at 8,500 feet.

241 The next day we continued our march over the same plateau country. Villages are scarce here, and there is very little cultivation owing to lack of water. At the end of this march of 18 miles the road descends to Hsiao-lung-t'an which is near a small tributary of the Yangtze.

On the 7th after descending to Kung-shan, our road led
us up a narrow cultivated valley, ending with a slight ascent
137 to Liu-shu-ho. The country here is more wooded: the hills
are covered with firs, and I pitched my tent in a grove of
chestnut trees.

407 I saw a curious rice husking machine here. It consisted of a wheel in an upright position which wheeled round and

000 I found at Yün Chou the same mandarin whom I had met there the year before. He was very civil and friendly, but, like all Chinese officials, he wants the traveller to go on by a main road to the nearest town, so as to get rid as quickly as possible of the responsibility of having a foreigner in his district.

Now the road from here to Wei-yüan which I proposed to follow can by no means be considered as a *ta lu* or big road, so my ideas did not at all meet with the mandarin's approval. Accordingly in the evening he sent a message to my interpreter to say he would like to see him, and gravely informed him that there was a rebellion going on in Mêng-ma, a place I should have to pass through. Of course I knew this was pure fiction, and I sent an answer to say that if on nearing Mêng-ma I found anything going on I would take some other road. After this there were no more objections, and we left Yün Chou the next morning, climbing very steeply more than 3000 feet up a grass-covered range.

The following day we descended into the Mêng-ma valley, which we followed down for a day and a half. The width of cultivation only averages about 100 yards on either
137 side of the little river which waters it. The hills on both sides are covered with scrub jungle, which runs down to the edge of the fields, and the river in the middle is lined
361 with willow and other small trees. Along the foot of the hills are scattered at intervals little villages, each surrounded in the Shan fashion with its clump of cultivated bamboos. The Mêng-ma valley strikes one as being rather pretty at first, but its monotony begins to pall after a time.

631 Mêng-ma was formerly a Shan state, but is now administered directly by the Yün Chou mandarin. The representative of the sawbwa's family, with a few Shan households, still lives in the principal village, but he has now little power. In fact the Shans have been entirely absorbed by the Chinese, and the Shan language and other signs of Shan nationality have practically died out.

000 Turning out of this valley we crossed another range of hills, and on the 17th December, the fifth day out of Yün Chou, crossed the Mekong at Ka-li ferry. The river here has a strong current and is a little more than 100 yards

5: Davies G-5 (1894-1900) 1909 AF16 Southwest China AF16

●137 Another hilly march the next day brought us to Mo-lien, which is also inhabited by Lo-los. Much of our road lay through very fine pine forest. This tree, called *sha-mu* by the Chinese, is much valued by them for making coffins, for the manufacture of which the best wood that a man can afford is always used. Among a Chinese population these forests would be of immense value, but here they are quite wasted. One sees magnificent trees cut down and burnt simply to get ashes to manure the fields with.

APPENDIX III

THE CLIMATE AND PRODUCTS OF YÜN-NAN.

IN so large a province the nature of the country and 132
the crops grown, naturally vary somewhat, but except in the north-west corner there is a sufficiently close general resemblance between other parts of Yün-nan.

Let us deal first therefore with this north-west corner which in the nature of the country and of its inhabitants is purely Tibetan, forming with western Ssŭ-ch'uan that part of Tibet which is directly under Chinese rule.

Southwards the Tibetan tract extends to about the 27th parallel of latitude. North of this line is a country of very high mountain ranges, the plains even rising to from 8000 to over 12,000 feet. The climate here is naturally colder than other parts of Yün-nan, and where heights extend from 6000 feet on the river banks to over 15,000 feet on the hill-tops, it varies much in different places. At the higher altitudes snow may fall in any month of the year, and many of the passes are liable to be blocked throughout April. In the plains the climate is less severe, but except in a shut-in river bed it never becomes hot.

Parts of this country, especially the tops of the mount- 241
ains, are bare and barren, but a great deal of it is clothed
in fine forests of cedar, fir, and other trees. Rice culti- 137 •
vation hardly exists here: even the plains are too high and cold to grow it. A certain amount of maize is cultivated, but even for this a fairly warm climate is necessary, and the bulk of the crops consist of wheat and barley. Peach, walnut and other fruit trees also exist.

The cereal products of this part of Yün-nan are how- 233
ever scanty and poor. It is essentially a grazing country, for good grass is to be found nearly the whole year round.

[p. 309]

233 Ponies, mules, cattle, sheep, and pigs are extensively reared, and in the colder places large herds of yaks are to be met with.

135 Mineral wealth too is not wanting in this corner of Yün-nan. In the neighbourhood of Wei-hsi T'ing there are mines of silver and copper, and just over the border of Ssŭ-ch'uan in the semi-independent state of Mi-li (lat. 28° 10', long. 100° 50') gold is found in some quantity.

278 Among other products of the Tibetan part of Yün-nan
224 must be mentioned musk, skins and furs, rhubarb, and other Chinese medicines.

438 This corner of Yün-nan, however, owing to the sparseness of its population and its distance from trade centres, is not at present of great commercial importance, though wool, timber, and gold may in the future become important articles of trade.

133 Let us then now consider the rest of the province. The highest plains here are at an elevation of 8000 feet, while some of the river valleys in the south of the province are even below 2000 feet. But these extremes are exceptional. The great bulk of the plains of Yün-nan lie at an average of 6000 feet, with the hill tops rising some 3000 or 4000 feet above them.

132 The climate is excellent. In winter there are often frosts at night, but not of great severity, while in the day-time the weather is usually bright and pleasant. Snow falls in the plains only very occasionally and does not lie long. All through the dry season, which lasts from the beginning of November to the latter half of May, there is no unpleasant heat. From June to September inclusive is the monsoon, and rain falls heavily at times, with fine intervals of a few days. In these intervals the hottest weather is experienced, but in the higher plains the thermometer seldom rises above 85°. By October the main force of the rainy season has been spent, though some rain may still be expected. An occasional wet day or two there may be even in the dry season, but Yün-nan, except in its north-eastern corner, is free from the continual mist, clouds, and rain which are prevalent in Ssŭ-ch'uan in the winter.

137 The vegetation of the country naturally varies much in different parts of the province. The flat part of the plains

is chiefly cultivated. Of the mountain ranges some are 137
rather bare, covered with grass or fern only; others are well clothed with fir woods, or at lower elevations with semi-tropical forests. To a traveller accustomed to the vast jungles of Burma, Yün-nan would appear a bare country, but it would seem well wooded when compared to the barren hills of the north-west frontier of India. It is in fact neither a very bare nor a very thickly wooded province. No doubt there was formerly much more forest, but the wants of the inhabitants in fire-wood and house-building have entailed much cutting of timber, which has never been replaced by planting. The amount of cultivation in the hills varies much according to the density of population and the fertility of the soil. In places nearly the whole hillside is fields; in other parts one may go for miles without seeing a clearing. In eastern Yün-nan especially the soil is often so dry and water so scarce that cultivation is hardly possible.

The principal crop of Yün-nan is rice. This is the 243
staple food of the Yünnanese, and it is only in very out-of-the-way hill villages that the people are too poor to afford it and have to live on maize or millet. All the plains that are capable of being irrigated are given up to rice cultivation throughout the summer.

The rice harvest is in October, and when this has been 249
reaped, a second crop of opium, wheat, or beans is in many 243
places sown for the winter.

I should estimate the relative quantities grown as about half opium[1] and a quarter each of wheat and beans. It is not, however, every plain that is capable of producing this second crop off the ground from which the rice has been reaped. When this cannot be done some of the plain land is usually kept unsown with rice, so as to be used for winter crops.

In the hills rice is also extensively grown. In many places the sides of the valleys can be dug into terraces and irrigated by the little hill streams, and here good crops are obtained. In less favourably situated localities the rice

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[1] Since this was written, however, the opium crop has been considerably diminished, as Hsi Liang, the present Viceroy, caused all poppies near Yün-nan Fu to be pulled up in Dec. 1907. Along the main routes and for two or three days' journey round the capital scarcely any opium has been grown in 1907-8.

134 brown" type soil is rich in mineral foods but rather low in humus content and is shallower in depths than the soils of the Chengtu Plain. However, on account of the hilly nature of most parts of the Basin, soil characteristics vary greatly in different local areas.

311 241 In many ways, the distribution of agriculture and forestry and the features associated with these uses of the land are related to and conditioned by one or more of the natural elements characterized in the foregoing paragraphs. Forests mantle the
•[131] mountain slope, and tree crops are characteristic of many of the hillsides. Agriculture dominates the Chengtu Plain, and is conspicuous along the numerous valley floors and on the terraced hills.

133 311 Of all the natural elements at work in the Basin, topography is a highly important factor that affects the agriculture land use and other forms of cultural life, and the adjustment to this natural element is especially conspicuous. First of all, the close correlation between the cultivated-land index and the topography is most striking. In general, there is a consistent tendency for the cultivated-land index, and the population patterns as well, to decrease from the center of the Basin to the peripheral highlands. Second, the adjustment of the Basin's set-
361 tlement forms to the topography is outstanding. As in most parts of China, about 85 per cent of the population of Szechuan Basin is rural. But unlike any other part of China, there are comparatively few large villages and nuclear hamlets, with the exception of the Hsien[1] capitals. This remarkable fact is largely a result of the rugged and extremely dissected topography of the Basin. The settlement forms have had to adjust to the local topography. This is particularly true in the eastern and northern parts of the Basin.

312 In the agricultural adjustment to water resources and drainage patterns, the following examples may be noted. First, by seizing the torrential flow of the Min River, the Basin has built not only the oldest but also the most successful and easily-maintained irrigation system of all China. This system has freed the Chengtu Plain from the hazard of floods and droughts, and has insured the unbroken agricultural prosperity of the Basin. This

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[1] Hsien or district in China corresponds somewhat to the county unit of the United States.

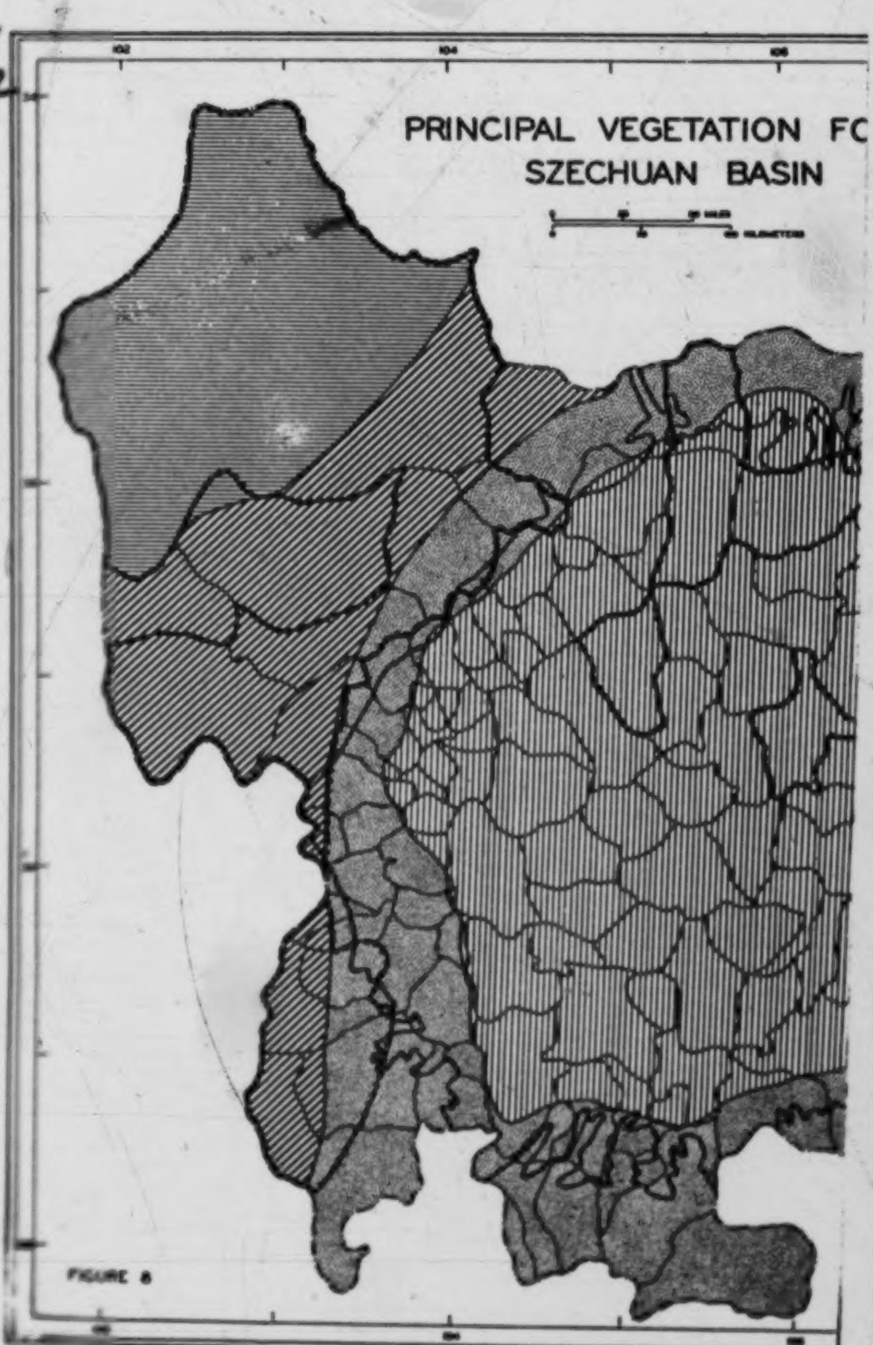
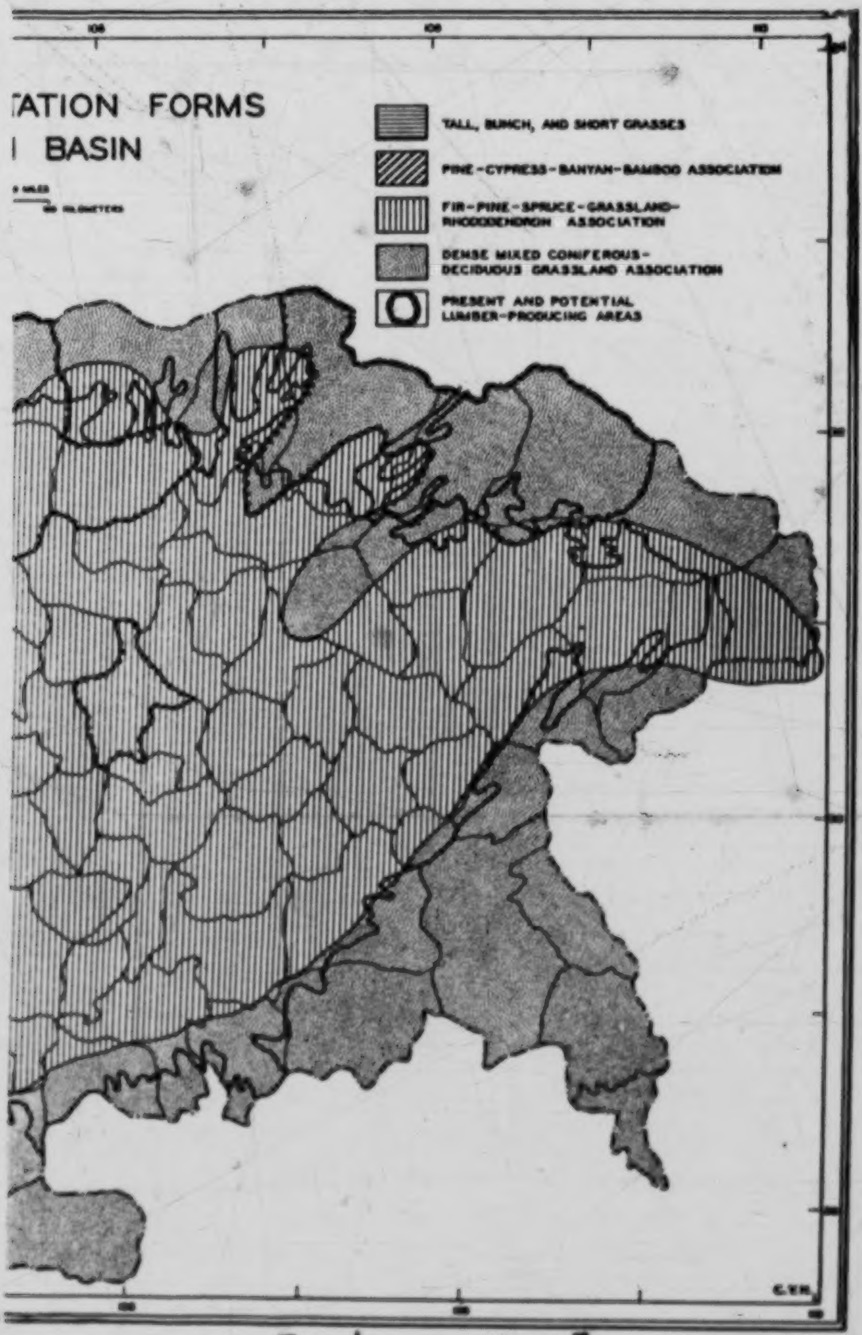

PRINCIPAL VEGETATION FC
SZECHUAN BASIN
102
104
106
MILES
KILOMETERS

FIGURE 8

[End map 4 (a)]


TATION FORMS
BASIN
TALL, BUNCH, AND SHORT GRASSES
PINE-CYPRESS-BANYAN-BAMBOO ASSOCIATION
FIR-PINE-SPRUCE-GRASSLAND-RHODODENDRON ASSOCIATION
DENSE MIXED CONIFEROUS-DECIDUOUS GRASSLAND ASSOCIATION
PRESENT AND POTENTIAL LUMBER-PRODUCING AREAS
G.T.R.

[End map 4 (b)]

133 as its branch veins. The distribution of these veins seems, however, to be somewhat unilateral with the heavier concentration of streams in the upper, or northern, half of the leaf (Fig. 7).

The drainage pattern of the Basin possesses some distinctive and readily observable characteristics. One is the close relationship between the direction of flow of the streams and the local geological structures. First of all, most of the streams (particularly those in the areas with the folded structure) flow either at the bottom of a syncline or on top of an anticline, especially if the latter happens to be composed of less resistant formations than those which are present in the surrounding area.[1] Second, when a river transverses the longitudinal axis of resistant anticline ridges, in most cases at right angles, steep gorges are characteristic. This is particularly true in the case of the Yangtse and the Chialing rivers. Third, practically every river in the Basin has a number of terraces lying above the present level of high water. Each of these terraces probably represents a stage when river erosion was quiescent at the particular locality in which the terrace occurs. Rivers were rejuvenated after each of these stages of terrace development and their flood plains channeled to new depths. For instance, beginning from Feng-chieh, at the head of the gorges, following the Yangtse, extend a number of terraces of different magnitudes and heights, ranging from 15 to 50 meters. Particularly these terraces of the 50-meter-high are of great significance in the location of towns and villages.[2] The great city Chungking, as well as the urban centers of Feng-chieh and Yun-yang, for example, are located on these 50-meter-high river terraces. Cities of lesser magnitudes like Chung-hsien, Pei-ling, and others are located on the 20-meter-high terraces.

3. Vegetation Forms

•137 The Basin is well known for its rich plant life. Vegetation forms peculiar to all climates, ranging from tropical palms to sub-polar firs, flourish in close juxtaposition and in great profusion. Generally speaking, however, there are three major areas of vegetation associations within the Basin[1] (Fig. 8). They 137 are, first, the pine-cypress-banyan-bamboo association, occupying a large portion of the central and southern part of the Basin; second, the dense mixed coniferous-deciduous--mainly chestnuts (Castanea), oak (Quercus), and sweet gum (Liquidambar)--grassland associations, occupying the highland areas surrounding the Basin; and third, the coniferous (composed of mainly the Genera Abies, Picea, Tsuga, and Larix) grassland-Rhododendron associations, occupying a large part of the western Basin.

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[1] Cheo, *op. cit.*, p. 26.

[2] W. H. Wong, "Notes on a Journey to Szechuan," *Chinese Geographical Magazine*, XIX, No. 4 (1931), 9.

Particularly in the third of the areas mentioned in the preceding paragraph altitudinal zonation of vegetation is clearly shown.[2] As a rule the forests are on higher levels, whereas the intermediate slopes are covered with grass vegetation. Northwest of the Basin there lies the well-known "prairie" area, including both the tall bunch and short grasses (mostly stipa and some thick sods of Avena and Festuca) developed on the degenerated chernozem soils of the Sung-pan districts.

4. Soils

As soils will be discussed in more detail in connection 134 with the agricultural land use, only the principal soil regions will be mentioned at this point. Generally speaking, there are three soil regions of major significance in the Basin[3] (Fig. 9), namely, (1) the purple-brown (forest) soils, distributed in most parts of the Basin, (2) the non-calcareous alluvium and rice paddy soils mainly in Chengtu Plain and some other minor river valleys, and (3) the slightly to moderately podsolised old and young yellow earths found in the peripheral highland and anticlinal ridge areas of the Basin.

B. Major Elements in the Cultural Landscape of the Basin

1. Population Patterns

The most striking feature of the population pattern of 162 the Szechuan Basin is that with the exception of the areas around

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[1] C. S. Fang, Personal correspondence, April 16, 1941.

[2] Ibid.

[3] J. Thorp, Soil Geography of China, Plate 1, 1936.

Another interesting characteristic of this agricultural 249 area of the northern Basin is that this area is the most important 137 producing center of a very important semi-agricultural product, the herbs, in the Basin. In addition to the meager subsistent agricultural production, the herb furnishes as a very important "cash crop" for the farmers. This is mainly due to the fact that in this area there are large tracts of land where the slope is too steep and the soils are too shallow for regular crop production. These lands are used, either in cultivated form or in "wild growths" for herbs.

Other outstanding features of this agricultural area include 162 its moderate population density (Fig. 10), its specially thick cypress growths, and the conspicuous absence of coal, iron, nanmu, and pine vegetations.

4. The Combined Agricultural and Forestry Area of the Eastern Basin

In terms of both the agricultural prosperity and the general 241 appearance of its agricultural landscape, this combined agricultural-forestry area of the eastern Basin (Fig. 24) is the least attractive and poorest. Here the topography is dominated by the numerous steep high parallel anticlinal ridges. Plains and gentle hills are even more restricted.

As to soils, in addition to the usual "purple-brown" 134 type of the Basin, there are numerous tracts of soils, old and young yellow earths, which are derived from limestone parental materials. In most cases these soils are shallower in depths than the purple-brown type and are much slower in the rate of renewal. These factors handicap considerably its efficient agricultural production.

The principal crops here are potatoes, hemp, rice, corn, 241 wheat, and kaoliang. Although rice is reported to be grown in every district of this agricultural area, its acreage is more limited here than in any other agricultural area.

The agricultural land-use of this area is controlled 311 largely by its topography. Agricultural lands here are derived 241 from two principal sources, first, on the manger-like trough lands at the top of the broad anticlines wherever the bed rocks happen to be less resistant than the surrounding structures. These trough lands are, however, rather restricted in extensions.

CHAPTER IV

FORESTRY LAND-USE

A. Principal Lumber-Producing Areas and Lumber Products

Most of the forested areas of the Szechuan Basin are rather detached in nature and are composed of small original growths high in timber value. Exceptions to this generalization include the relatively small areas west and northwest of the Chengtu Plain, the dense coniferous-deciduous association (including mainly the genera of Abies, Pica, Tsuga, Larix, Castanea, Quercus, and Liquidamber), and the areas along the upper Tung River Valley (Fig. 8). Taking the province as a whole, including the mountainous areas surrounding the Basin, the forest area of Szechuan is estimated to contain about 26 per cent of the total land area of the province, some 360,159 square kilometers.[1]

Generally speaking, there are five principal lumber-producing areas in the province (Fig. 8). Each of them is characterised by a reasonably good potential supply of lumber and by a production of some special species. The five areas are: (1) the upper Min River area, including Sung-pang, Miao-hsien, Miao-kung, and Wen-chuan districts. This area is dominated by pines, lien-shan (Abies), yun-shan (Picea), tieh-shan (Tsuga) and chang (Cinnamomum); (2) the Ching-I River Valley, including Tien-chuan, Pao-hsin, and Yaan. It is dominated by Chih Shan (Cunninghamia Lanceolata), Yao Hu Tao (Juglans Cathayensis), Ching Kang Li (Quercus Glauca), and others; (3) the Ta-tu River Valley, including Yueh-tsuin, Han-yuen, and O-pien. This valley is dominated also by Tiao Shan (Picea Brachytyla), Tien Shan (Tsuga Yunanensis), chu (Castanopsis), Kao (Lithocarpus), muho (Schima), and many others;[2] (4) the Tung River Valley area, including Tung-chiang,

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[1] Special Report on the Forestry of Szechuan, National Central University Publication ([illegible]).

[2] Chen Wan Chung, Report of a Survey on Forestry of the Ta-tu River and Min River Areas (1936), p. 14.

● 137 Nan-chung, Cheng-ko, and Wan-yuan districts. This area is dominated by pines, banyans (Fig. 40), and cypresses, which, however, are not of very high timber value; and (5) the northwestern hilly area of the Basin, including Santai, and Chien-ke, Pai-chuan districts. This area of hilly country is dominated by pines, cypresses, some Nanmu, and some firs (Fig. 8).

313 137 Of the five areas mentioned, the Ta-tu River Valley and the Ching-I River area are by far the most important. Here virgin forests of great timber value are in abundance. Both are now under development by government and private interests. These forests will prove especially valuable for the many immediate needs in the Basin, such as construction on the Chengtu-Chungking Railway line, mining, and paper-making. Some logging activities are carried on in nearby camps, and the timber sawed is used by local towns and villages. But, however, large portions of the lumber produced are made into rafts and floated down the swift Ta-tu and Min rivers. A few saw mills, equipped with simple traditional devices, are located at Chengtu and Loshan. The wood sawed, transported either by small native boats or frequently on men's backs, found its market in various parts of the Basin, especially in the urban areas of Chengtu, Loshan, Luhsien, and other cities. Sometimes, however, such lumber finds its way as far as Chungking and other eastern areas where imported lumber often dominated the market.

The Szechuan Basin contains at least thirty different kinds of trees of high timber value in the Basin.[1] These include such outstanding and well known Chinese conifers as the Pai shu or cypress (cypressus funebris), the Ma Wei sung (Pinus massoniana), the Chia Shan (Cunninghamia lanceolata), the Ying Tsung (Abies delavayi), the Ne Tiao Shan (Picea ascendens), Hsiang Peh Sha (Juniperus Saltuaria), and a number of outstanding hard woods, such as the Nanmu (Machilu nanmu), the chestnut (Castanopsis), the Hu-tao (Juglaus rigia), the Chang (cinnamonuna camphora), and the Chu li shu (Quercus serrata).

Among all the foregoing species the Chia-shan, Ma Wei Sung, Nanmu, Hu-tao, and Pai shu are the most important. They are the most common sources of timber supply for the Basin. The

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[1] Pei Chi Heng, A Survey of the Timber Trees of Szechuan Province (1937) . - , 26.

Chia Shan (Cunninghamia lanceolata) deserves special mention as it is the most common tree for all-round use in the Basin. Not only because of its wide distribution throughout the Basin, particularly on the mountainous areas bordering the northwestern corner of the Chengtu Plain, but also because of its special adaptability and quick growth on the cretaceous sandstone soils, this tree has proved especially popular among farmers in the Basin. It generally grows from 80 to 120 feet tall and has a very straight stem. After the trees are cut down, this conifer reproduces itself by sprouts from the old stumps, requiring no seeding or nursery cultivation. The bark is commonly employed for roofing purposes. The wood is light, fragrant, and easily worked. For general building purposes, house-fitting, indoor carpentry, and boat-building, it is the most esteemed of all Chinese timbers. It is also in great demand for coffin-making, the fragrant properties of the wood being believed to act as a preservative.

Besides the Chia Shan, the most unique, if not the most commonly used tree, is the Nanmu (Michilus Nanmu). It is one of the most valuable broad-leaf evergreen hardwoods, comprising several species of Lauraceae. The timber is close-grained, fragrant, greenish or brownish in color, easily worked, and very durable.[1] It is the most highly prized timber for high-grade construction purposes, such as for the pillars and beams of palaces, temples, and other important structures. It is also used in the best grade furniture and cabinet work, and is commonly sought by the wealthy Chinese for making their coffins. It is among the most graceful and beautiful evergreens in the Basin. The trees are somewhat localized and are found particularly in abundance in the Min River Valley, near Chengtu Plain and some western hilly areas of the Plain where there is a dependable water supply near the irrigation streams.

In addition to the trees of the foregoing timbered areas, the bamboo thickets constitute another important source of timber supply in the Basin. The bamboo is a fast-growing plant and has many different species. The vegetative bodies and growths of the bamboo differ in these different species. Bamboo varies from the dwarf shrub of about 10 feet tall, with a diameter of 3-4 inches,

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[1] Pei Chi Heng, op. cit., p. 42.

313 •137 as in the case of Kuang Ying bamboo, to giant tree of well over 80 feet in height and with a diameter over 12 inches, as in the case of Nan Chu and Tze Chu bamboos. They often grow in thickets, groves or clumps and usually have a golden, yellow or dark green foliage and with broad sheaths. There are numerous slender stems developed around the large clumps and the principal stems. The stems are hollow inside, have many joints, and often have thick wood which furnishes the most useful part of the plant.

Bamboo has a fairly wide range of habitat and grows well under different kinds of physical conditions.[1] The principal habitats of the bamboo are in alluvial areas near streams, around farmsteads, and not infrequently on sandy soils at the hill slopes.

[262 285] The usefulness of the bamboo is indeed limitless. First of all, the tender bamboo shoots are used as a vegetable, and serve as one of the most famous Chinese delicacies. The smaller stems are used for paper-making, textile-weaving, making of boxes, baskets, chopsticks, and light house utensils and furniture, whereas the large stems are used for the construction of irrigation wheels, salt brine and gas tubes, boats, bridges, carpentry, and numerous other industrial purposes. All in all, it was once reported that the bamboos are used in more than six hundred different ways in the Basin.[2] Thus the bamboo, to be sure, plays a very important role in the economy of the Basin. Above all, the bamboo, on account of its growths of matted fibrous roots, is proved most effective in holding soil and preventing soil erosion in many hilly areas of the Basin.

There are few large bamboo plantations in the Basin. Most farmers have small patches of bamboo thickets or groves around their farmsteads. The bamboo products are used principally for the farmer's own needs and any surplus left is sold to handicraft manufacturers of the nearby areas.

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[1] Generally speaking, bamboos cannot stand up very well under drought conditions. North of Kuang Yuan, for instance, on account of the lack of sufficient moisture, and possibly also because of lower temperature during the winter, no bamboo is grown (Fig. 8). Also, generally, very little bamboo growths are found around high altitudes of probably over 5,000 feet above sea level in the Basin.

[2] T. F. Hou, "The Conditions of Salt Fields at Tze-liu-ching and Kung Ching, Szechuan," Szechuan Monthly, VIII, No. 6 (1937), 59.

B. The Tung Tree Production

The tung-oil tree "belt" of China lies in the area between 22 and 33 degrees north latitude, and 100 and 120 degrees longitude east. Within this area is included the whole province of Szechuan (Fig. 1) and, in fact, normally Szechuan produces about a third of the total annual production of tung oil in China. It is commonly asserted that Szechuan Basin possesses the most favorable natural environment for growing the Tung tree. Certainly, it is the most distinctive and the best known product of Szechuan Basin. The Tung tree now occupies a vitally important position in the economy of the Basin as is evidenced by the fact that it comprised as much as 65 per cent of the total export trade of the Basin in 1940.[1]

1. *Physical Requirements for Tung Tree Production*

The mild, almost frostless winter, the moderate rainfall, the high humidity and cloudiness, and the high summer temperatures all are favorable to the growth of the Tung tree in the Szechuan Basin.[2] The customary sudden drop of temperature in the early spring for a short period just at the time of flowering of the Tung trees, locally known as "tung tung hua," or "frozen tung flower weather," the cause of which is not yet known, is considered especially favorable for the growth of Tung trees. This common assertion has recently been confirmed by American experts who have compared the results of Tung-tree growth in Florida with that in the Basin.[3]

The Tung tree is essentially a hill-side plant. It thrives well on the most rocky sites, on the poorest and thinnest soils, and with a minimum annual rainfall of 29 inches. Anyone who has traversed the gorges above the Yangtze may notice these low-growing, flat-topped Tung trees, clinging to the rocky banks on soil no more than a few inches deep. The Tung tree is noted for its capacity to withstand drought and this and other conditions fit

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[1] K. K. Yen, "An Analysis of Foreign Trade of Tung Oil of Szechuan," Journal of Foreign Trade, March, 1941, p. 27.

[2] Wu Liu, "The Production of Tung Oil in Szechuan," Szechuan Monthly, III, No. 6 (1932), 13-21.

[3] Ibid., p. 15.

137 it wonderfully well into the general topography, soil, and climatic conditions of the Basin.

2. Principal Producing Areas

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137 The Tung trees grow over wide areas of the Basin, but the three principal producing regions are: (1) the Yangtse area, including Ning-shui, Yun-yang, Wan-hsien, Kai-hsien, Chung-hsien, and Feng-chieh districts; (2) the Chien and Chi River areas, including Yu, Siu-shan, and Pei-ling districts; (3) the Chialing River area, including Ho-chuan and Pa-hsien districts (Fig. 36). Among them, the Yangtse Valley area, especially the districts near the anticline belt, is by far the most important.

[433] The total annual production of tung oil is estimated to be about 760,000 piculs.[1] In 1936, Ning-shui, one of the districts which makes up the first of the three principal producing areas, led all the districts with a total annual production of 180,000 piculs; Chung-hsien, of the same producing area, in the second place, produced 140,000 piculs; and Yun-yang produced 100,000 piculs (Table 13).

The Tung trees (Aleurites fordii) which grow in the Basin are of two kinds--Chai tung, or fuel tung, and mi-tung, or rice tung. The Chai tung is taller in height, generally around 20 to 25 feet, and has rougher and larger branches. The fruit contains fewer seeds (only three to five) than the Mi tung, and thus has less oil content. Hence, very few Chai tung trees are planted here.

The Mi tung tree, the major kind planted in the Szechuan Basin, is shorter in height (about 15 feet or less) and is highly ornamental in flower and foliage. The flowers, produced in great profusion during April. are usually white, stained with pink and yellow markings. These are followed always by green apple-like fruits, which are hidden among the large, glossy, heart-shaped leaves and generally ripen between August and September. Each fruit usually contains five to seven seeds. The Tung trees begin to bear fruit in their fourth year, and their period of greatest production is from the eighth to the sixteenth year. A decline in productivity begins with the seventeenth year. Thus there is a local saying, "The seventeenth year is the limit for the Tung Tree." 314 137

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[1] C. S. Chang, The Tung Oil of Szechuan (Ming Seng Co., 1936), p. 18. But the most recent report gave the total acreage of Tung tree for 1940 as 1,150,000 mow and with an annual production of 1,140,000 piculs (cf. Yen, op. cit., p. 31). This is, of course, a little unusual and is due to the war time boom production.

The tung seed-collecting season varies from locality to locality in the Basin, but, on the whole, comes in the middle of September. After the green fruit is picked, it is piled into heaps and covered with straw or grass. The heat thus generated quickly rots the fleshy part of the fruit and the seeds are removed. They are then roasted,[1] ground, steamed, and pressed, like other oil-producing seeds. All of these processes are done with very simple equipment and at low efficiency. The roasting and steaming are done by burning of charcoal or coal, whereas the pressing and grounding are all done by animal power. The product, which amounts to about 40 per cent of the weight of the seed, is a brown and somewhat watery oil. It is sent to the nearby local plants for refining, and then packed in wooden tubs and bamboo baskets to be shipped down the Yangtse to Shanghai for export abroad.

In the economy of the Szechuan Basin the Tung tree figures as a natural mountain product. Usually, the trees are left to grow wild; very little attempt is made by the farmers to cultivate them. Only during recent years, following the continuous success in the export trade, have a large number of Tung tree plantations and nurseries been organized and scientific methods applied to cultivation and production. The best known plantations are the I-shui at Wan-hsien, and the Jen-ho at Pi-shan. Each comprises from 200,000 to 300,000 trees. Both have met with phenomenal success during the past few years. An increasing number of such plantations, sponsored either by the government or by private interests, have recently been organized.[2] 245

3. Transportation and Marketing of Tung Oil

The present war has greatly stimulated the production of tung oil in Szechuan and has brought drastic changes in the 314

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[1] Roasting is, however, not essential and is not practiced by all farmers.

[2] Chao, op. cit., p. 21.

S 133 Hu, and the Ying-hsing Hu.[11]

6. The Hsi-k'ang Tibetan Plateau Lands

While Hsi-k'ang is somewhat peripheral to our present study, the close relationship to western Ssu-ch'uan and northern Yun-nan of eastern Tibet or Kam (Hsi-k'ang means "Western Kam") makes it desirable to examine its geographical situation. In any event the valleys of the Ya-lung Chiang, the An-ning Ho, and the Ta-tu Ho with its tributaries the Ta-chin Ch'uan (Great Gold River) and Hsiao Chin Ch'uan (Little Gold River) have figured since ancient times in Chinese history, and Lhasa has never had any real claim to the high plateau country east of the Chin-sha Chiang. The boundary between Tibet and China settled by the Manchu Emperor and the Tibetans in 1727 and lasting down to 1910 ran from the Mekong just north of A-t'un-tzu, crossed northward into the Chin-sha Chiang valley and followed the water divide between the Chin-sha and the upper Mekong sources to the Kokonor Territory.[12]

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Sw 133 ● 137 311 S 311

Photo 4. Shuang-chiang, Yun-nan Province (23° 29' N, 99° 50' E)

In this panorama, the viewer looks northwestward along the ridge of the Pang-ma Shan, the highest point of which culminates at the 10,608 feet high Liang Shan in the left center background. The large forest remnant in the foreground is on the southern end of the Pang-ma Shan just northwest of Shuang-chiang town. Here is dramatically contrasted the dense forest vegetation that once covered all of South China with the denuded slopes that comprise the large percentage of South China mountainland today. The slash-burn, shifting cultivators that comprise the mountain tribes are largely responsible for this situation, although ultimately the cause is attributable to the pressure of the Han-Chinese who have crowded out the mountain tribes and prevented natural regrowth to take place. While the mountain tribes prefer their cool heights, the Pa-yi basin dwellers are found usually only in the low, hot valleys such as that at the right of the photo where the low fields may be flooded for wet-rice cultivation.

2: Wiens G-4 (no date) 1954 AF17 South China
Southwest China AF16

[p. 23]

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T 792 between pp. 168 and 169 in original text. / /169/ Anyone on the Koko Nor or in Tsaidam who has a particularly good sword, sees to it that it comes from Dergi gon tschen.

The monastery as well as the princely residence of Dergi gon tschen lie five days' journey below Dschoma lhagan on the left (eastern) side of the Yangtze, a short day's ride from the river, and seem to be difficult to reach from the north. 000 (1) On March 31, I stayed a whole day in Antu Dschomba not far from Dschoma lhagan, in order to get guides to take me to Dschoma lhagan. There were people who offered to do so, but they all assured me that I could not reach it from this side with my pack animals and boxes because the paths were so narrow that pack animals would fall headlong. Since I did not get any carriers, I had to give up this idea, too.

C 487 Below Dschoma lhagan the Dre Chu-Yangtze enters a narrow valley as it breaks through a large mountain ridge in a more southerly direction. But the large road maintains the southwest direction that it has taken for several days. Immediately behind Dschoma lhagan (Chinese: Kwan yin miao) it again ascends a considerable height, and here only cattle raising can be carried on.

T 243 On our next trek (April 1) we passed several smaller monasteries that stood close to the road. After seven hours of travel we reached Nan dyi, a number of settlements consisting of seven or eight stone houses. The people were friendly, invited us to live among them and also sold us barley. They asked when the "Pe lang" was coming. Around this time the farmers are still threshing with their flail on their threshing floor which is always on the flat roof of the house. In order to clean the grain they do not use a winnowing shovel like the Chinese, for instance, but pour the grain on the floor several times, letting the mountain wind carry off the chaff.

C 103 On the second day, beyond a pass, we came upon the kingdom of Ling gose that is supposed to derive its name from King Gesar's Ling or gLing. It is independent, so to speak, and has its own dyalbo (rgyalbo). The latter lives in Gose gomba and his home is a not very princely-looking stone house.

C 137 From the road we could see in the south and southwest, about one and a half days' journey from Dschoma lhagan, the valley of the Yangtze Kiang, although we did not once catch a glimpse of the river which is wedged in between rocks. Beyond the valley there are crests

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1. In the Atlas de la Chine by d'Anville, Paris 1785, the monastery Tschonkor is indicated in this region.

137 that bear spruce forests up to 4,500 meters, whereas the peaks, many of which rise up well above 5,000 meters, are treeless and were completely covered with snow when I saw them (Plate XXX).

132 In the entire upper Yangtze Valley many fields are laid out on countless artificial terraces all the way up the slopes, but today they are abandoned, and have been for a long time, so that large trees and underbrush have grown up. Some people said the reason for this may be attributed to the many wars and disputes that have reduced the population so much during the last century /170/ so that today these fields are no longer needed. However, this assertion seemed to be contradicted by the fact that these abandoned sites can be observed over too large an area and almost as far as Dawo, that is, in entirely different states. Other people said that increasing drought conditions accounted for the abandoned fields; they did not yield enough. This may be true because the fields are almost always on a southern slope which dries out in the sun. Throughout Tibet as well as in the Himalayas, as I have already mentioned, stands of forests are well developed only on the northern slopes (1), and thus we may realize what an important factor the drying quality of the sun is. The second explanation is therefore probably the correct one, because, as far as I could see, the abandoned acres were not capable of being irrigated and depended on natural rainfall. In some places, however, as for instance on the border between Dergi and Ling gose, I did get the impression that the border feuds had depleted the population and resulted in the abandonment of the acres. In the valley between Nan dyi gomba and Gose gomba there were many ruins of houses next to destroyed fields. But the most recent changes have taken place only in the course of the last half century. (2)

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1. This may be observed in the north as far as the Tien Shan and Altai, and in the Altai it was already observed by the Chinese philosopher Ch'ang ch'un when, in July 1221, he rode over the Tsch'ang sung pass on his journey to the court of Genghis Khan.

2. Father Desgodins who spent a long life in South Tibet, said in 1875 already that the population of Southeast Tibet was decreasing. He blamed the endless disputes, but above all, the strictness of the Gelugba sect.

T 777 braided and around its neck hangs a red or black tassel and a little silvery bell.

C 133 On the southeast side of the Muri La only the upper part of the slope is steep (Plate XXXIII). Six kilometers below the pass lies the Yü lung Ts'o Lake. It is about five kilometers in circumference and was formed by /173/ glaciers which have now disappeared. In this part of Tibet there are no larger lakes to be found. The Yü lung Valley soon becomes a few kilometers wider. On the left there was pasture land. In lateral ravines we occasionally saw small tent villages.

C 137 On the right there were beginnings of forests, spruce and pine of great beauty, that grew up to 4,100 meters altitude, but that always kept to the northern slopes and were not found on the valley bottom.

T 438 On our next few marches we met 400 to 500 yaks carrying tea, and on April 9 we passed as many as 900 yaks. The caravans usually set out very early in the morning and are already making a rest-stop by 10 or even 9 o'clock. It takes five months in this way for a bail of tea to get from Ta tsien lu to Lhasa and thousands of waterways are crossed.

T 792 On April 7 we camped beside Yangtze gomba (Säge gomba) a small monastery of the Nima faith, containing 80 monks. Very near it there is another monastery of this sect and that is set in between tall spruce and limestone rocks. One of the gelong served me butter tea in his cell.

C 137 On April 8 we camped beside a slope on which a forest fire had been raging for days and which had already caused a great deal of damage. It was the largest I saw in Tibet. Several square kilometers of the most beautiful virgin forest had fallen a victim to the elements and was totally destroyed. Every day one sees traces of forest fires but no one pays any attention to the fires. Most of them are caused by careless travelers or native shepherds in the dry winter season. They are practically never fought, but simply left to burn themselves out.

C 133 At noon on April 9 we left the Yülung Chu Valley (Plate XXXI). It extends due southeast for practically 50 kilometers and all the way there is a broad, sumptuous floor of pastures. Then suddenly it became deeper and began turning to the north and northeast whereas the road continued in the old direction, along the furrow to the southeast. In the end the river was 20 paces wide and one meter deep. It was now only 3,575 meters high.

The next campsite lay in a veritable park landscape (Plate XXXV) C
at 3,800 meters with a very beautiful view of the snow-capped chain 137
of mountains in the south. Unfortunately the alpine flowers were still in hibernation. But the many seed pods and remnants of huge edelweiss, of hundreds of kinds of primroses, of orchids, rhododendron and gentian were evidence of how beautiful and colorful it must be here in June and July.

On April 10, amid clear sunshine, we crossed another pass, 4,100 C
meters high, from which there was a sudden and surprising view of the 133
magnificent mountains of Rungwatsun and Amne Rala. The new layer of snow had melted far up, as a result of the sun of the last few days. The dark ridges of primary rock stood out clear and sharp against the sparkling blue of the sky. The steep slopes of the peaks glistened with eternal snows and ice crevices, glacier fragments and seracs, furrowed avalanches, and walls of snow beckoned and called to my alpine heart (Plate XXXVI). But I had to remain below on the almost flat moraine at 4,000 meters and guard the caravan. We set up camp amid the huge masses of moraine that extend many kilometers north of the high chain, and that /174/ have covered with granite boulders the sandstone and limestone that was pushed down from the north centuries ago against the wall of primary rock. On this day the maximum temperature was +16.5°, and the minimum at night was -4°.

At noon the next day we rode past a picturesque hermitage, Tschora
yunka, that stood on a limestone cliff and was inhabited by 14 nuns, T
"ani." A loquacious old man told us with much head-shaking about 792
"those crazy women." He said that for five years a beautiful maiden has lived there on the cliff, who turned down the best matrimonial offers because she wanted to spend her time praying and serving God. In her ambition to imitate the male priests, she had forbidden every male creature from coming near her cell.

At an altitude of 3,700 meters fields begin to appear. The first T
village lay at 3,600 meters. The main road led straight through it. 361
The houses were all two-storied with flat roofs and were not very close together. W.W. Rockhill came through here in 1889 and from his book I learned that the natives of this region were particularly hostile to strangers, so we rode rather quickly through the first settlement that numbered 25 houses. To the questions "Where from?" and "Where to?" Da Tschang simply replied with some short, every-day lie.

The village lies at the head of a large, wide plain stretching to the east, and is the seat of a community chief. It belongs to the Dergi kingdom. Not far to the south a large brook comes out of a

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133 The Da Chu Valley - I also heard it called Tschuwo Chu - extends in a straight line toward the southeast, constantly following the stratification of the sandstone slabs which are again steep here and pressed together vertically. The old road with its countless holes and stone debris continues to keep to the right side of the valley. Like the course of the valley, it aims straight for its goal. Only the muddy stream winds around the peaks that rise up 1,000 meters from the valley and touches sometimes the right, sometimes the left side of the valley. Sometimes it is wedged in between detritus mounds and fragments that a tributary brook thrusts in its way, then again by projecting rock terraces consisting of hard stone slabs, until it becomes /188/ a narrow "valley within a valley." On the valley terraces above the stream there are fields and farms spread out and bushes and hedges
137 separate the individual fields. The flora - in the middle of April everything was still in its winter sleep even here in the south which has a latitude corresponding to that of lower Egypt - was rich, even abundant here at an altitude of 3,500 - 3,300 meters, compared with what I had come across shortly before. There were pastures with thick grass on the southern slopes of the valley, and they reached almost up to the peaks. The northern valley walls, however, were covered with dark spruce forests with wild, tangled underbrush, magnificent hideouts for small and large bush rangers, so that I was glad to know that the Chinese were the real masters here. After the long rides I had taken with my rifle under my arm, I felt as safe as though I were in Abraham's bosom.

579 Deeply cut forest ravines lead off the road toward the south. In all the larger ones there are winding paths leading into the parallel Dsa Chu Valley to the Tschantui. "Two years ago, before our present da jen came to Hor Tschanggu, one could not ride so peaceably along this road," the soldiers told me. "The Tschantui from the south and the Khorgan and Loko from the north made sudden attacks on every caravan carrying goods. Every month there were people killed. But Wu da jen formed his own militia, set up agents and native guards everywhere who announce the approach of all suspicious-looking gangs with fire and smoke signals. Neither the Tschantui nor the Ngolok-Khorgan dare make a sudden attack any more." However, I also learned on another occasion that not a year had passed since the last big attack. At that time 70 mules along with their packs were driven away into the Ngolok country. Not only the Khorgan through whose country I passed in 1904, but also the Ngaba robbers were well known here.

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Even the imperial telegraph line led over the bleak saddle of the Dschedo la and its 4,390-meter altitude. (1) The line had just been completed as far as Ba tang. My Hsining men who had never before seen a telegraph line had to conduct a detailed investigation. Of course, they had long since heard that one could send a whole letter over the wires, but they had the most adventuresome ideas as to how this was done. They wanted to cut the wire and see what the hollow space inside looked like. Shortly after I had dissuaded them from this wild idea we met a telegraph sentry consisting of six men strong. They were looking for a damaged wire because the service had been interrupted the day before. It seemed a miracle to me that one could telegraph at all at the time because hardly any of the insulators on the poles were intact. The Tibetans regarded them as a particularly suitable target for their guns as well as for their beloved stone slings.

Beyond the Dschedo Pass the eye first of all falls on bare rocky ridges and on broad, planed-out and dry ravine bottoms. The peaks in the vicinity of the pass rise above 5,000 meters. They are all still below the boundary of perpetual snow and one could discover on them only scattered white spots. However, when one descends the steep, uneven military road which was paved many years ago, and when one has turned the corner and reached an eroded ravine bottom, then suddenly gigantic fields of perpetual snow sparkle in the south (Plate XLVI). In front of these in the depths nestles the Dschedo Valley with the little village of Dschedo, an important stopping place for the night for people coming from below. Before one reaches this town one crosses the wide rhododendron zone /202/ which, with its large white and pink blossoms, extends down from 4,500 to 3,800 meters. The large blossoms were just opening and the steep mountain slopes sometimes formed a vertiable sea of blossoms. Long before one reaches Dschedo one is within the boundary of mountain forests, and the amount of moisture which the monsoon must unload in these border mountains has caused an almost impenetrable jungle to develop on both sides of the valley, on the northern as well as southern slopes. 133 137

Near Dschedo the ravine which is used by the road abandons its southeasterly direction and turns due east, and now all at once there 000

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1. Kreitner-Szechenyi 4,499 meters; Rockhill 4,365 meters (14,320 feet); Gill 4,425 meters (14,515 feet; War office map 15,000 feet.

C 133 gray, hard glacial ice. Here, too, however, the glaciers are really only miniature glaciers and, as in our native Alpine valleys, only the weak embryos of the ice masses teeming with power, that once reshaped the mountain masses into their present-day large outlines and made the valleys U-shaped and more passable for human beings and animal herds.

Beyond the Da po Shan the way soon leads into thick copses of rhododendron and into a broad valley shaped like an amphitheater. But soon there comes a steeper valley covered with fine old timber. OOd We pitched camp at the first dry spot where some grass for the animals beckoned. Scarcely had we unloaded when I fell asleep from weariness for we had all been obliged to exert our full power to help the animals drag their packs through the snow. When I awakened not very long after I was plagued by a wicked pain in both eyes, which gave me no peace. My servants said that it was still daytime and the sun was high in the heavens but for me night had come. I had become snow-blind to such an extent that I could with no amount of effort /216/ raise my eyelids. I lay in the dark tent and kicked my legs like a child, when the pain from my conjunctivitis was too great. A little black bear of the species ursus tibetanus that I had owned for four weeks and that walked about freely in the camp and at night tried to crawl under my covers, was my nurse and whiled away the time for me. He growled and scolded when I became too restless on my bed of pain, and scratched and bit in all friendliness if I touched him somwhat ungently and unmercifully as I tossed about. But he always bit me in a touchingly gentle way, not wanting to hurt me, just as a dog does that plays with its master. For a day and a half I was obliged to stay in the camp. Then at last the swelling had receded sufficiently that I could pry open my eyelids somewhat with my fingers and could recognize the necessary remedy in my medicine chest.

E 361 Our trek on June 10 down along the same brook and through dense woods brought us to the town of Mao niu gu or, Tibetan: Brismed, 2,800 meters. The village is inhabited by Tibetans and Chinese and shows quite a number of old fortress towers. From the right as well as the left a rather large torrential stream flowed into our valley, and where it joined the water was so deep that it could not at any point C 137 be crossed. The forest was beautiful, high and dense. There were only isolated clearings where there had been forest fires during the winter. Old spruce trees are rare here; birches, poplars, oaks and maple predominate. Lilac trees stood in full bloom. The many

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strawberries and strawberry blossoms reminded me of the German forests. C 137 ● We did not see any game except foxes and now and then a band of monkeys that fled from branch to branch with a great deal [136] of noise.

Many of the Hsining horses which were not used to the narrow and 000 slippery paths, fell down the embankment, and always delayed us at the countless shaky bridges. At each bridge the packs had to be unloaded and carried over individually by us humans, while the animals were held at the head and tail and half lifted and half shoved across to the other shore. Fortunately not one of the horses was in such good spirits while this was going on that it felt like making wanton capers. A few of the bridges that were 30 paces long were made of only a single plank which lay only a handbreadth on the spars that extended from the banks of the river. At every step the planks bent and swayed so that the horses could hardly keep on their feet unaided. Four meters below, the cataract tore, roared and foamed. My old bitch Tschimo always got dizzy and when everyone else had crossed she cautiously crossed the plank on her belly.

Beginning at 2,400 meters the settlements in the narrow wooded C T valley began to grow denser. For a long time there were only isolated 361 farms and small groups of houses, most of which in the narrow valley bottom are inhabited by Chinese colonists. 241 They squat in miserable straw huts, whereas the Tibetans occupy stone houses on the steep clearings of the slopes. They have here remained wealthy land owners. But for how long? The Tibetans plant little corn, but a great deal of barley and wheat. The Chinese in the bottom of the valley plant corn almost exclusively and are traders.

Every afternoon toward two o'clock we made camp upon some C T /Plates XLIX, L, LI, and LII appear between pp. 216 and 217 in the 777 original text./ /217/ small clearing. The animals always found some food in the woods and were also fed with corn and tsamba which we had brought from Ta tsien lu. Most of these clearings originated as a result of forest fires. At all of them were to be found the familiar three stones (tab rdo) which had served previous travelers as a cooking place. These are also regarded by the natives here as the home of some hearth god who wishes to be well treated. Woe to him who touches the three stones with his foot who carelessly drops the kettle and perhaps spills its hot contents on the three stones or on the fire! Without doubt luck will be against him from that moment on!

clouds hung down into the valley. At the same time the maximum temperature rose to plus 14°. I found the moisture very annoying, but Brdyal did not seem to be the least impressed by it. "The rain is not nearly as heavy as it is in the south where I come from. It is now the sixth (Chinese) month; in the seventh and eighth it rains even more in Menia (Minyag), near Ta tsien lu, for instance." I heard that down there it does not get dry until the ninth month, but this seems to me extreme for the Tibetan climate. Farther north the rainy season ends much sooner. 000

C 137

On our new day's march (from seven until half past two o'clock) the landscape continued to be hilly with grass pastures a foot high, filled with the loveliest flowers. The valley floor was 300 meters wide in the middle and on the right side there occurred, now and then, unbroken sections of tall timber that rose up suddenly. The sharp demarcation of these little forests /254/ always challenged one to speculate as to their origin. The difference in moisture between the north and south slopes is not an adequate explanation. It seems to me that accidental and also artificially-induced forest fires are chiefly to blame for this condition. The Tibetan nomad, like every shepherd, is the sworn enemy of all forests. He wants only grassy plains for himself, on which he can let his large herds disport themselves. He heedlessly burns down the forest wherever he finds it, because he needs it for nothing but his tent poles; for fuel he finds it more convenient to use the dung from his animals. Now, wherever the tall timbers are destroyed, the young shoots - as we have seen it happen in old Turkish territories - do not readily attain a great height the second time. The herds of cattle do not perhaps preclude a moderately tall and thick bushy growth, but forests are never again established. Before man spread himself out in the Tibetan highlands the virgin forest undoubtedly continued unbroken to a point much higher up than it reaches today. In its virgin state the land probably presented a very different aspect and may for this reason alone have had a more moist climate. Whoever has seen the tall timbers on the Tschümong Chu (Vol. I, Plate LXII) that are still preserved in hidden ravines or has found the isolated old pines in the South Koko Nor Mountains, will probably agree with me that in all probability extensive forests existed there in the not too distant past, which covered the prairies of today, and that it must have been man who destroyed them and allowed only a few to remain as "witnesses."

T 492

On the long stretch to Middle Zanskar, which leads straight as a die to the northwest, I saw only three times a group of three tents

000 antilopes into the valley. /259/ Now Neh'ere comes up to me. He is fawning, he wants to lick my hand, a thing he considers necessary to do several times each night. Suddenly it seems as though he had been given a blow, and with loud barks he runs after the old bitch into the valley. A hundred meters in front of me are two large pools. From that direction comes a splashing sound as though a heavy body were sliding into the water and in the same direction - isn't that the light of a firefly I see? - In rapid succession I fire three sharp alarm shots. They are only meant to say "watch out" and to give due notice that someone is on the alert. Thereupon the spashing sound becomes plainer down below in the pools and amid the ugly howling of the dogs I hear a few obscene Chinese swear words. Soon all is again quiet as the grave. And thus it remained until dawn. I arose late and set out for my saddle in the mountain which lay at an altitude of 4,390 meters, buried between bare granite crags of 400 and 500 meters (Plate LVIII).

C 133 From this saddle there extended a giant trough of granite due northeast. It was 30 kilometers long. All the lateral valleys which ran down from the surrounding granite mountains came to an abrupt end 150 meters above the floor of the main valley, and all the water they conveyed had to run in shallow, narrow channels down the walls of the trough-shaped valley. On the slopes and in the broad bottom of the valley round granite boulders formed expanses of rock alternating with moors, which made it very difficult for the caravan to make headway. Every quarter hour some animal would get stuck or slide down the round cliffs and into a rock fissure from whence it had to be pulled out and reloaded. We found no habitation here and no trace even of temporary dwellings. It seems that only occasionally people pass through the valley. Only marmots and countless rabbits inhabit the tall grass of the pastures and the many beautiful larch woods (Plate LIX).

C 137 On July 21 the woods gradually grew more dense. When we came to a point just below 3,700 meters the valley floor became narrower and more like a ravine, and the tall spruce timbers became an absolutely impenetrable virgin forest. At 3,600 meters - we had just a moment ago come across sandstone with a N 70° W strike - we found

T 361 pastures between the forests and soon after four black tents. The way now became a well-worn path, but it went on for a long distance, so that it was three in the afternoon before we arrived at the first

T [341] houses of Merge. Barley, oats and potato fields appeared in the midst of the pine forest, and two-story houses covered with shingles and